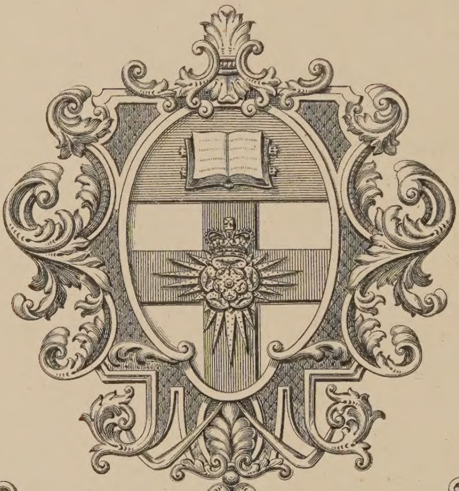

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ACCOUNTS AND PAPERS:

THIRTY-SIX VOLUMES.

—(5.)— 66

ARMY.

~~MANUFACTURING DEPARTMENTS;~~
MEDICAL DEPARTMENT.

NAVY.
Statistical Health Report. 1861.

Session

4 *February* —— 29 *July* 1864.

VOL. XXXVI.

XXXVII

OCTAVO PORTIONS.

ACCOUNTS AND PAPERS:

1864.

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FIFTH VOLUME.

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ARMY MEDICAL DEPARTMENT.

STATISTICAL,
SANITARY, AND MEDICAL
REPORTS

FOR THE YEAR

1862.

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
PRINTED BY HARRISON AND SONS,
FOR HER MAJESTY'S STATIONERY OFFICE.

1864.

3404]

TO THE RIGHT HONOURABLE

THE SECRETARY OF STATE FOR WAR.

My Lord,

In accordance with instructions laid down for the conduct of business by the Director-General and Heads of Branches of the Army Medical Department, I have the honour to submit the accompanying Reports on the Health of the Army in 1862, and on various matters connected with the duties of the Officers of the Department.

I have the honour to be,
My Lord,
Your Lordship's most obedient
Humble Servant,
J. B. GIBSON,
Director-General.

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STATISTICAL REPORT

ON THE

HEALTH OF THE ARMY IN 1862.

BY

T. GRAHAM BALFOUR, M.D., F.R.S.
DEPUTY INSPECTOR-GENERAL OF HOSPITALS, AND HEAD OF THE STATISTICAL BRANCH.

ERRATA IN REPORT FOR 1861.

Page 14, last line of second Table, *for* 78 *read* 251.
,, 16, Table, Military Train, *for* Execution 4·4 *read* Corporal Punishment 4·4.
,, 28, last line of Table, *for* 1861 *read* 1860.
,, 51, second Table, Ionian Islands, *for* 3,548 *read* 4,064.
,, ,, 43·12 ,, 37·65.
,, ,, 15·74 ,, 13·74.
,, ,, 18·03 ,, 15·80.
,, 61, first Table, Newfoundland, 1859–60, *for* 26·41 *read* 11·31.
,, 97, two last lines, *for* 105· and 106· *read* 10·5 and 10·6.

TO THE DIRECTOR-GENERAL

OF THE

ARMY MEDICAL DEPARTMENT.

SIR,

I HAVE the honour to submit the Statistical Report on the health of the Army for 1862.

That portion of it which relates to India is, I regret to say, very imperfect, in consequence of the Annual General Return from Bengal not having been received and of defects in the Quarterly Returns from all the Presidencies. There is every reason, however, to hope that the arrangements now in operation will enable us, in the next volume, to furnish as full details respecting the health of the troops in India as of those in the other foreign stations.

I have the honour to be,
Sir,
Your most obedient humble servant,

T. GRAHAM. BALFOUR,
Deputy Inspector-General.

6, *Whitehall Yard,*
May 1864.

STATISTICAL REPORT FOR 1862.

I.—ON THE HEALTH OF THE TROOPS SERVING IN THE UNITED KINGDOM, IN 1862.

Section I.

Sickness and Mortality.

United Kingdom.

The average strength of non-commissioned officers and men serving in the United Kingdom, from the 28th of December, 1861, to the 26th of December, 1862, inclusive, as shown by the weekly returns, was 78,173. During the same period there were 77,332 admissions into hospital, and 682 deaths, and the average number constantly sick was 4,178. Of the deaths, 538 occurred while the men were present with, and 144 while absent from their corps. These numbers give the proportion of 989 admissions, 8·72 deaths, and 53·45 constantly sick per 1,000 of mean strength, being lower than the corresponding ratios in 1861.

The results for 1862, compared with the average of the two preceding years, are shown in the following Table :—

	Ratio per 1,000 of Mean Strength.		
	Admitted into Hospital.	Died.	Constantly Sick.
1862..	989	8·72	53·45
1860–61	1,040	9·61	54·66

In all these particulars, therefore, there has been a satisfactory reduction upon the ratios of the preceding period.

The following Table shows the influence of the different classes of diseases in producing this amount of sickness and mortality :—

United Kingdom.

Orders.	Average Strength, 78,173.	Admitted into Hospital	Died.			Ratio per 1,000 of Mean Strength.			
			With the Regiment.	Absent from the Regiment.	Total.	1862.		1860–1.	
						Admitted.	Died.	Admitted.	Died.
	Class I.								
1	Miasmatic Diseases ..	15,270	62	13	75	195·3	·96	234·3	1·11
2	Enthetic ,, ..	25,787	6	3	9	329·9	·11	361·8	·12
3	Dietic ,, ..	574	4	..	4	7·3	·05	6·3	·07
4	Parasitic ,, ..	3,465	..	..	..	44·3	..	32·5	·01
	Class II.								
1	Diathetic Diseases ..	241	6	5	11	3·1	·14	2·1	·14
2	Tubercular ,, ..	1,525	213	74	287	19·5	3·67	18·2	3·41
	Class III. Diseases of the—								
1	Nervous System ..	1,577	39	9	48	20·2	·61	19·3	·70
2	Circulatory ,, ..	694	45	8	53	8·9	·68	8·8	·75
3	Respiratory ,, ..	6,752	77	11	88	86·4	1·13	102·5	1·61
4	Digestive ,, ..	3,050	31	6	37	39·0	·47	37·4	·49
5	Urinary ,, ..	220	4	2	6	2·8	·08	2·9	·11
6	Reproductive ,, ..	806	..	..	..	10·3	..	6·2	..
7	Locomotive ,, ..	322	..	1	1	4·1	·01	3·3	·02
8	Integumentary ,, ..	10,025	2	..	2	128·2	·03	119·0	·10
	Class IV.								
4	Diseases of Nutrition..	249	1	1	2	3·2	·03	1·5	·04
	Class V.								
1	Accidents	6,451	29	7	36	82·5	·46	79·2	·64
3	Homicide	..	1	..	1	..	·01	·02	·02
4	Suicide..	11	18	3	21	·1	·27	·13	·25
5	Execution	..	..	1	1	..	·01	..	·02
6	Corporal Punishment..	160	..	..	..	2·1	..	1·9	...
	Not specified	153	..	..	..	2·0	..	2·4	·005
	Total ..	77,332	538	144	682	989·2	8·72	1039·7	9·61

From this Table it appears that there has been a considerable decrease in the admissions by Miasmatic and Enthetic (venereal) diseases, and also, though to a less extent, by those of the respiratory system, while there has been an increase in Parasitic diseases, and those of the integumentary system. In Miasmatic diseases it has been most marked in Ophthalmia, Diarrhœa, and Continued Fever, and in Enthetic diseases in Primary Syphilis, Bubo, and swelled testicle. The reduction in the mortality has been chiefly in Miasmatic diseases, and those of the respiratory system, but the deaths by Tubercular diseases have been slightly in excess of the average.

We shall now examine the prevalence and mortality of the classes of diseases at the different stations, arranged in the following groups :—

1. Seaport Towns—comprising Devonport and Plymouth, Portsmouth, Dover, Bristol, and Newcastle-upon-Tyne.
2. Dockyards and Arsenals—Chatham and Sheerness, Woolwich, Pembroke Dock.
3. Camps—Aldershot, Shorncliffe, Colchester, the Curragh.
4. Large Manufacturing Towns — Manchester, Sheffield, Birmingham, Preston, Glasgow, Paisley.
5. London and Windsor.

United Kingdom.

6. Dublin.
7. Stations occupied by Depôt Battalions not included in any of the preceding groups—Maidstone, Canterbury, Parkhurst, Walmer, Winchester, Chichester, Warley, Athlone, Birr, Belfast, Buttevant, Templemore, Limerick, Fermoy, Cork, Stirling, Aberdeen.
8. The remaining stations, chiefly small towns not comprised in the preceding groups, or large towns where only a very small detachment of troops is quartered.

The following Table shows the admissions into hospital and deaths in each of these groups during the year, and the number of men who died while absent from their corps:—

	Average Strength.	Admitted into Hospital.	Died.	Average constantly Sick.
1. Seaport Towns	10,806	10,776	55	600
2. Dockyards and Arsenals	10,271	12,627	113	683
3. Camps	22,153	20,221	110	1,068
4. Large Manufacturing Towns ..	3,256	3,430	27	171
5. London and Windsor	5,442	5,120	51	306
6. Dublin	4,645	4,434	45	264
7. Stations of Depôt Battalions not included in preceding groups..	12,525	12,179	97	700
8. Remaining Stations	9,075	8,545	40	386
9. Detached from their Corps ..	..	..	144	..
Total ..	78,173	77,332	682	4,178

From this Table, and previous Reports, the following results have been obtained:—

Ratio per 1,000 of Strength.	1862.			1860–61.		
	Admitted into Hospital.	Died.	Constantly Sick.	Admitted into Hospital.	Died.	Constantly Sick.
1. Seaport Towns	997	5·09	55·52	1077	9·42	57·34
2. Dockyards and Arsenals ..	1229	10·99	66·50	1292	10·55	68·50
3. Camps	913	4·97	48·21	942	6·91	51·55
4. Large Manufacturing Towns	1053	8·29	52·52	1013	8·25	47·98
5. London and Windsor	941	9·37	56·23	909	8·41	51·13
6. Dublin	955	9 64	56·83	1003	7·07	56·19
7. Stations of Depôt Battalions not included in preceding groups	972	7·74	55·89	1080	9·85	56·28
8. Remaining Stations ..	942	4·41	42·53	1018	7·34	43·20
Total, including men detached from their Corps	989	8·72	53·45	1040	9·61	54·66

There has been a decrease in the admissions into hospital at all the groups of stations, except the large manufacturing towns, and London and Windsor, which show a slight increase. The difference has been most marked at the stations of Depôt Battalions, and in the seaport towns.

In previous volumes the results for London and Windsor had reference only to the Household Troops. During the year 1862, in consequence of two battalions of the Guards being employed in Canada, a portion of the London duties was taken by the 1st Battalion 3rd Foot, the Head Quarters being stationed in the Tower, with a detachment in one of the barracks at the West

United Kingdom. End. The relative amount of sickness and mortality during the year in the different corps per 1,000 of mean strength, was—

	Admissions.	Deaths.	Mean Sick.
Household Cavalry	597	9·32	33·05
Foot Guards	1,060	9·23	66·57
1st Battalion 3rd Foot	910	10·19	42·21

These results are satisfactory as showing an amount of sickness below the average, whether measured by the admissions or the mean number constantly sick, in the regiment quartered in the Tower, formerly the most unhealthy barrack in London.* Although the results for so short a period as one year do not justify any positive deduction, they seem to indicate that the important sanitary changes effected in the Tower, since the publication of the earlier Statistical Reports, have exercised a very beneficial influence on the health of the troops.

The following Table shows the influence of the different classes of diseases in producing the sickness and mortality at each group of stations :—

---

* See page 14 of the "Statistical Report on the Sickness, Mortality, and Invaliding among the Troops in the United Kingdom," presented to Parliament in 1853; also, page 341 of the "Evidence taken before the Royal Commission appointed to inquire into the Regulations affecting the Sanitary Condition of the Army, &c." presented to Parliament in 1858.

United Kingdom.

	Groups of Stations ..	Seaports.		Dockyards and Arsenals.		Camps.		Manufacturing Towns.		London and Windsor.		Dublin.		Depôt Battalions.		Remaining Stations.	
	Average Strength ..	10,806		10,271		22,153		3,256		5,442		4,645		12,525		9,075	
Orders.	Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted	Died	Admitted.	Died.
	Class I.																
1	Miasmatic Diseases ..	1,955	8	2,674	18	3,827	8	549	..	1,196	5	843	8	2,620	11	1,606	4
2	Enthetic ,, ..	4,076	..	3,486	1	7,282	..	1,213	..	1,555	1	1,728	..	3,571	3	2,876	1
3	Dietic ,, ..	76	1	139	..	95	..	30	..	29	..	13	..	103	2	89	1
4	Parasitic ,, ..	673	..	555	..	1,124	..	182	..	192	..	55	..	455	..	229	..
	Class II.																
1	Diathetic Diseases ..	36	2	54	2	53	2	6	..	18	..	20	..	34	..	20	..
2	Tubercular ,, ..	177	13	367	54	349	41	62	13	124	27	90	22	244	32	112	11
	Class III.																
	Diseases of the—																
1	Nervous System ..	197	4	357	5	353	10	53	4	77	4	58	1	310	8	172	3
2	Circulatory ,, ..	71	1	155	10	112	14	19	2	21	2	71	6	200	6	45	4
3	Respiratory ,, ..	751	11	1,325	12	1,453	17	310	3	547	7	438	4	1,253	19	675	4
4	Digestive ,, ..	310	2	557	5	796	10	124	3	225	..	145	2	543	7	350	2
5	Urinary ,, ..	29	1	46	1	53	..	9	..	3	..	6	..	65	2	9	..
6	Reproductive ,, ..	144	..	117	..	231	..	10	..	20	..	61	..	101	..	122	..
7	Locomotive ,, ..	60	..	65	..	69	..	6	..	17	..	11	..	54	..	40	..
8	Integumentary ,, ..	1,276	..	1,451	1	2,726	..	487	..	640	..	578	1	1,672	..	1,195	..
	Class IV.																
4	Diseases of Nutrition ..	15	1	135	..	35	..	4	..	3	..	10	..	42	..	5	..
	Class V.																
1	Accidents	901	8	1,067	2	1,603	5	341	1	436	4	297	..	837	3	969	6
3	Homicide	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
4	Suicide	..	3	..	2	2	3	1	1	1	1	..	1	3	4	4	3
6	Corporal punishment ..	21	..	21	..	32	..	20	..	7	..	5	..	40	..	14	..
	Diseases not stated ..	8	..	56	..	26	..	4	..	9	..	5	..	32	..	13	..
	Total	10,776	55	12,627	113	20,221	110	3,430	27	5,120	51	4,434	45	12,179	97	8,545	40

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RATIO per 1,000 of MEAN STRENGTH.

Orders.	Groups of Stations ..	Seaports.		Dockyards and Arsenals.		Camps.		Manufacturing Towns.		London and Windsor.		Dublin.		Depôt Battalions.		Remaining Stations.	
	Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
	Class I.																
1	Miasmatic Diseases ..	180 ·9	·74	260 ·4	1 ·73	172 ·7	·37	168 ·6	..	219 ·8	·92	181 ·5	1 ·72	209 ·2	·88	177 0	·44
2	Enthetic ,, ..	377 ·2	..	339 ·4	·10	328 ·7	..	372 ·6	..	285 ·8	·18	372 ·0	..	285 ·1	·24	316 ·9	·11
3	Dietic ,, ..	7 ·1	·09	13 ·5	..	4 ·3	..	9 ·2	..	5 ·3	..	2 ·8	..	8 ·2	·16	9 ·8	·11
4	Parasitic ,, ..	62 ·3	..	54 ·0	..	50 ·7	..	55 ·9	..	35 ·3	..	11 ·8	..	36 ·3	..	25 ·2	..
	Class II.																
1	Diathetic Diseases ..	3 ·3	·19	5 ·3	·19	2 ·4	·09	1 ·8	..	3 ·3	..	4 ·3	..	2 ·7	..	2 ·2	..
2	Tubercular ,, ..	16 ·4	1 ·20	35 ·7	5 ·26	15 ·8	1 ·85	19 ·1	3 ·99	22 ·8	4 ·96	19 ·4	4 ·73	19 ·5	2 ·55	12 ·3	1 ·21
	Class III.																
	Diseases of the—																
1	Nervous System ..	18 ·2	·37	34 ·8	·49	15 ·9	·45	16 ·3	1 ·23	14 ·2	·74	12 ·5	·22	24 ·8	·64	19 ·0	·33
2	Circulatory ,, ..	6 ·6	·09	15 ·1	·98	5 ·0	·63	5 ·8	·61	3 ·9	·36	15 ·3	1 ·29	16 ·0	·47	5 ·0	·44
3	Respiratory ,, ..	69 ·5	1 ·02	129 ·0	1 ·17	65 ·6	·77	95 ·2	·92	100 ·5	1 ·29	94 ·3	·86	100 ·0	1 ·52	74 ·4	·44
4	Digestive ,, ..	28 ·7	·19	54 ·2	·49	35 ·9	·45	38 ·1	·92	41 ·3	..	31 ·2	·43	43 ·4	·56	38 ·6	·22
5	Urinary ,, ..	2 ·7	·09	4 ·5	·10	2 ·4	..	2 ·8	..	·5	..	1 ·3	..	5 ·2	·16	1 ·0	..
6	Reproductive ,, ..	13 ·3	..	11 ·4	..	10 ·4	..	3 ·1	..	3 ·7	..	13 ·1	..	8 ·1	..	13 ·5	..
7	Locomotive ,, ..	5 ·5	..	6 ·3	..	3 ·1	..	1 ·8	..	3 ·1	..	2 ·4	..	4 ·3	..	4 ·4	..
8	Integumentary ,, ..	118 ·1	..	141 ·3	·10	123 ·1	..	149 ·6	..	117 ·6	..	124 ·4	·22	133 ·5	..	131 ·7	..
	Class IV.																
4	Diseases of Nutrition ..	1 ·4	·09	13 ·1	..	1 ·6	..	1 ·2	..	·5	..	2 ·2	..	3 ·4	..	·5	..
	Class V.																
1	Accidents	83 ·4	·74	103 ·9	·19	72 ·4	·23	104 ·7	·31	80 ·1	·74	63 ·9	..	66 ·8	·24	106 ·8	·66
3	Homicide	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	·11
4	Suicide	..	·28	..	·19	·1	·13	·3	·31	·2	·18	..	·22	·2	·32	·4	·33
6	Corporal punishment ..	1 ·9	..	2 ·0	..	1 ·4	..	6 ·1	..	1 ·3	..	1 ·1	..	3 ·2	..	1 ·5	..
	Diseases not stated ..	·7	..	5 ·5	..	1 ·2	..	1 ·2	..	1 ·6	..	1 ·1	..	2 ·5	..	1 ·4	..
	Total	997 ·2	5 ·09	1229 ·4	10 ·99	912 ·7	4 ·97	1053 ·4	8 ·29	940 ·8	9 ·37	954 ·6	9 ·69	972 ·4	7 ·74	941 ·6	4 ·40

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Miasmatic Diseases have been less prevalent than in 1861, at all the groups of stations, except London and Windsor, and Dublin. The relative prevalence of the principal diseases comprised in this class has been as follows :—

		Annual Ratio per 1,000 of Mean Strength.							
		Seaport Towns.	Dockyards and Arsenals.	Camps.	Manufacturing Towns.	London and Windsor	Dublin.	Depôt Battalion Stations.	Remaining Stations.
Eruptive Fevers ..	Admitted	2·4	5·5	·4	5·2	1·6	·4	2·7	2·6
	Died ..	..	·19	..	..	·36	..	·08	·11
Paroxysmal Fevers ..	Admitted	22·5	21·7	7·2	3·4	1·5	7·7	10·3	6·2
	Died ..	·19	..	..	..	..	·21	..	..
Continued Fevers ..	Admitted	16·6	26·4	21·9	20·3	25·0	29·1	21·8	15·4
	Died ..	·46	·49	·18	..	·36	..	·72	·22
Dysentery, Diarrhœa, and Cholera	Admitted	23·4	25·7	11·5	16·0	29·2	23·5	20·9	13·9
	Died ..	·09	·38	·05	..	..	·86	·08	·11
Sorethroat and Influenza	Admitted	38·6	69·1	37·0	46·4	76·6	39·	53·3	59·1
	Died ..	..	·10	..	..	..	·42	..	..
Ophthalmia	Admitted	23·6	20·7	21·7	22·1	15·8	26·5	31·9	13·1
	Died ..	..	·19	..	..	..	..	..	..
Rheumatism	Admitted	41·7	71·3	54·3	43·9	52·4	40·9	51·8	49·7
	Died ..	..	..	·05	..	·18	..	..	..

Eruptive Fevers have been more prevalent than in 1861, in the Dockyards and Arsenals, and in the large manufacturing towns. This arose in the former from the prevalence of Small Pox, Scarlet Fever, and Measles, at Woolwich, during the first half of the year, and in the latter, from Scarlet Fever at Preston, and Measles at Manchester. Small Pox prevailed to a great extent also at Edinburgh. Of 64 cases of this disease admitted into hospital during the year, 32 occurred at Woolwich, and 17 at Edinburgh. Of the former two, and of the latter one proved fatal. There were also four admissions at Warley, but the disease, in some of them at least, was supposed to have been contracted at Woolwich. The rest of the cases were at different stations scattered over the country. Scarlet Fever and Measles can scarcely be said to have prevailed in an epidemic form among the troops, only 47 cases of the former, and 50 of the latter, having been admitted into hospital, and the greatest number at any station being seven. Among the children, however, they were reported to be very prevalent at many of the stations.

Paroxysmal Fevers were more prevalent than formerly at the Dockyards and Arsenals, but the cases chiefly occurred in men who had suffered from Intermittent Fever during previous service in India.

Sorethroat (Tonsillitis) *and Influenza* were much more prevalent than in 1861 among the troops in London and Windsor, but no reason is assigned by the Medical Officers for this increase. They were also more prevalent in Dublin, and in the group of seaport towns.

Ophthalmia.—The admissions in Dublin show a very great decrease, but there were special circumstances, detailed in last Report, which raised the number of cases in 1861 greatly above the average.

Enthetic Diseases continue to hold a very prominent place as causes of inefficiency in the Army, the admissions ranging between 285 per 1,000 in the Depôt Battalions, and 377 in the seaport towns. The admissions by this class in the whole Force were 330 per 1,000 of the strength, or 32 per 1,000 under the average of the two preceding years. The improvement has been most

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strongly marked in the seaport towns, but is also manifest in the Dockyards and Arsenals, Camps, and Depôt Battalion Stations. There has been a very slight decrease in London and Windsor, and the "Remaining Stations," and an increase in the Manufacturing Towns and Dublin.

The following Table, in which are included all the stations where the strength of the troops exceeded 1,000, shows the relative amount at the various places in each of the last three years:—

	Ratio per 1,000 of Mean Strength.				Ratio per 1,000 of Mean Strength.		
	1862.	1861.	1860.		1862.	1861.	1860.
Colchester	464	415	430	Chatham and Sheerness	313	328	351
Manchester	455	487	289	The Curragh	304	364	373
Canterbury	441	397	290	Cork	288	354	346
Portsmouth	407	485	503	Edinburgh	278	260	300
Limerick	384	360	401	Shorncliffe	233	325	327
Dublin	372	363	409	Fermoy	159	195	268
Woolwich	371	399	473				
Devonport and Plymouth	367	470	440	London and Windsor: Household Cavalry	127	135	97
Aldershot	349	361	339	London and Windsor: Foot Guards	348	328	255
Dover	337	401	383	London and Windsor: Line Regiment	234	..	..

This shows an increase during the year at Colchester, Canterbury, Limerick, Edinburgh, and Dublin, and a decrease at the other stations, but particularly at Devonport and Plymouth, Shorncliffe, Portsmouth, Cork, and Dover.

The number constantly sick in hospital with Venereal was 1,739, or 22·24 per 1,000 of mean strength. The admissions into hospital by these diseases were, as already stated, 330 per 1,000. From these data we deduce the average duration of the cases to have been 24·61 days, and the total inefficiency from this cause to have been equal to the loss of the services of every man in the Home Force for 8·12 days, or the constant loss of upwards of two regiments for the whole year.

The reduction which has taken place in the prevalence of this class has been entirely in the group of Syphilitic diseases, the admissions by which were 183 per 1,000, while by the gonorrhœal group they were 147; in 1861 the relative proportions were 210 and 144 per 1,000.

Diseases of the Respiratory System have been less prevalent than in 1861 at all the groups of stations except the large manufacturing towns, and London and Windsor. In the latter, particularly, there has been a great increase, the proportion of admissions being nearly double that of the preceding year. We have already seen that there was also a great increase in the amount of Sorethroat and Influenza there, but no cause for the increase has in either instance been assigned by the medical officers.

Violent Deaths have been one-fourth less numerous than in 1861, the decrease being chiefly in those by drowning, which amounted to 17, or only half the number of the preceding year. Deaths by suicide have been more numerous, in the proportion of 21 to 14. The modes in which they were effected were:—By fire-arms, 14; cutting throat, 3; hanging, 1; poison, 2; and by railroad, 1. The two deaths by poison were those of a Hospital Serjeant, who, while in a state of intoxication, took a large quantity of morphia; and of an Assistant Steward of the Army Hospital Corps, who accomplished his object by prussic acid. The suicide by railroad was that of a Private of the 7th Regiment, who threw himself in front of a train near Deal, and was killed instantaneously.

The other classes of diseases do not appear to require special remark.

In the preparation of the returns showing the health of the different arms of the service, no regiment has been included which was not serving in the United Kingdom during the whole of the year. The information respecting the admissions into hospital in the Royal Engineers has been found to be greatly affected by the manner in which that corps is broken up into detach-

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ments, and spread over the country; it has been deemed advisable, therefore, to confine the statements respecting that arm to the mortality and the fatal diseases. The Coast Brigade Royal Artillery is included for the first time in this Report. It consists of non-commissioned officers and men selected from the other Brigades on account of good conduct and long service. They usually do duty in small detachments, at the various forts and batteries in the United Kingdom. From this circumstance it has been necessary to confine the information respecting them, as with the Royal Engineers, to the deaths and the diseases by which they were caused.

The following Table* gives a summary of the information respecting the health of the men of the different arms:—

	Average Strength.	Admitted into Hospital.	Died in and out of Hospital.	Discharged as Invalids.	Annual Ratio per 1,000 of Strength.			1859-61. Annual Ratio per 1,000.		1860–1. Ratio per 1,000.
					Admitted.	Died.	Invalided.	Admitted.	Died.	Invalided.
Household Cavalry	1,222	725	14	15	593	11·46	12·27	538	7·11	11·46
Dragoon Guards & Dragoons ..	9,884	9,791	46	282	991	4·65	28·53	958	6·81	35·44
Royal Artillery† ..	9,575	9,206	47	†	961	4·91	†	1,027	7·68	†
Royal Engineers ..	2,007	..	18	..	..	8·97	..	..	7·46	..
Military Train ..	1,238	1,380	4	33	1,115	3·23	26·66	1,090	7·37	30·51
Foot Guards ..	4,317	3,831	44	166	887	10·19	38·45	781	9·17	26·44
Infantry Regts. ..	29,439	21,493	197	757	832	6·69	25·71	900	8·45	28·35
Cavalry Depôts ..	759	844	10	45	1,112	13·17	59·29	1,330	10·18	56·19
Depôt Brigade, Royal Artillery†	4,019	5,193	55	473	1,292	13·68	34·79	1,334	11·24	20·59
Coast Brigade Royal Artillery†	1,371	..	27	13	..	19·69	9·48	..	..	..
Depôt Battalions .	15,576	14,071	167	792	903	10·72	50·85	1,060	13·34	29·33

This Table shows an increase in the admissions into hospital of the Cavalry, Military Train, and Foot Guards, but a decrease in all the other arms. The mortality has been above the previous average in the Household Cavalry, Royal Engineers, Foot Guards, Cavalry Depôts, and Depôt Brigade Royal Artillery, but there has been a considerable reduction in the other arms. The increase in the admissions and deaths, and in the number discharged as invalids, among the Foot Guards, may probably be due to the circumstance that on the embarkation of two battalions of Guards for Canada, in December, 1861, all weakly men were transferred to the battalions remaining in England, which gave strong, healthy men, in exchange, to complete the establishment of those going abroad. The high rate of mortality in the Coast Brigade Royal Artillery is probably in a considerable degree the result of the advanced age and previous service of the men composing it, a very small number of them being under 25 years of age, and nearly three-fourths of them having served upwards of ten years. The very low rate of invaliding from the Coast Brigade may also to some extent affect the mortality; in 1862 it amounted to little more than

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* It seems hardly necessary to observe that the totals of the different columns in this Table cannot correspond with the totals in the Table on page 6. The latter includes all the troops serving during the whole or any portion of the year in the United Kingdom, while from this Table are excluded, for reasons explained in a former Report, all Corps which were not serving at home during the whole of the year.

† The greater number of the invalids from the Royal Artillery are discharged at Woolwich, and appear in the return of the Depôt Brigade. The ratio per 1,000 is therefore calculated upon 13,594, the average strength of the corps serving at home, exclusive of the Coast Brigade.

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one-fourth of the proportion from the other brigades serving at home. In the Depôt Brigade the proportion of deaths among the men under 25 years, and among those above that age, on the average of three years—186062, was 6·96 and 21·95. The difference may be regarded as, to a great extent, the effect of previous service in unhealthy climates.

On calculating the mortality which would have occurred in each arm of the service, had the proportion of men at different periods of life been the same as in the Dragoon Guards and Dragoons, the following results are obtained :—

Ratio of Deaths per 1,000 living in	1862.	1859-61	1860–61.
Household Cavalry	8·32	5·20	..
Dragoon Guards and Dragoons	4·65	7·22	..
Royal Artillery	5·07	..	8·63
Military Train	5·90	8·92	..
Foot Guards	10·69	8·84	..
Infantry Regiments	6·48	8·68	..
Cavalry Depôts	11·73	..	8·77
Depôt Brigade Royal Artillery	18·20	..	15·24
Coast Brigade ,, ,, ...	9·04	..	..
Depôt Battalions	10·70	..	14·03
Civil Male Population of healthy districts in England and Wales	8·91		
Ditto ditto of England and Wales generally ..	7·45		

From this Table it will be seen that the mortality in the Cavalry, Artillery, Military Train, and Infantry regiments, in 1862, has been under that of the civil population of the healthy districts at the same ages ; that of the Household Cavalry has been a little below the average of England and Wales generally, while in the Foot Guards, and the Depôts, the proportion has been above that of the civil population. The numbers serving in the Household Cavalry, Military Train, Cavalry Depôts, and Coast Brigade Royal Artillery, are so small as to render the results liable to considerable fluctuation, and it must not be forgotten that in all of them the mortality is kept under by the process of invaliding.

The invaliding has been much lower than in 1861 in all the arms except the Household Cavalry, Foot Guards, and Royal Artillery. We have already explained the circumstances to which the increase in the number discharged from the Foot Guards has been attributable. The proportion invalided from the Artillery in 1860 and 1861 was lower than from any other branch of the service, and did not show any increase in the latter year, when it was so high from all the other arms except the Household Troops. In the present return it is nearly the same as the average of the Cavalry during the three years 1860-62.

During 1862 the number pensioned as invalids from the different corps included in the preceding Table, and the deaths among the men so discharged, from the date of being placed on the pension list, to the 31st of December, are shown in a return from the War Office to have been as follows—

	Placed on the Pension List during the Year 1862.	Of whom there Died before 31st December, 1862.
Household Cavalry	43	4
Dragoon Guards and Dragoons ..	289	8
Royal Artillery	152	5
Military Train	35	..
Foot Guards	202	13
Infantry Regiments	1,527	45

On adding these deaths to the number already noted, and correcting the strength by the addition of one-half the number pensioned, as explained in last Report, the following results are obtained :— *United Kingdom.*

	1862.			1860–61.
	Average Strength corrected as above.	Deaths of Soldiers and Pensioners.	Ratio of Deaths per 1,000 of Strength.	Ratio of Deaths of Soldiers and Pensioners per 1,000 of Strength.
Household Cavalry ..	1,244	18	14·47	7·26
Cavalry of the Line ..	10,029	54	5·38	7·66
Royal Artillery	9,651	52	5·39	7·86
Military Train	1,255	4	3·19	8·25
Foot Guards	4,418	57	12·90	11·78
Infantry Regiments ..	30,203	242	8·01	9·94

This Table shows a satisfactory reduction in the mortality of the Cavalry, Artillery, and Infantry regiments. The Household Cavalry and Military Train are, as already observed, too few in number to justify deductions from the results of one year, and the increase in the Foot Guards has been due to special and exceptional circumstances.

The admissions, deaths, and discharges by invaliding, in each arm of the service, by the different classes of diseases, are shown in the following Table. The diseases are stated in detail in Abstract No. I., of Appendix.

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Orders.		Household Cavalry.			Dragoon Guards and Dragoons.			Royal Artillery.			Military Train.			Foot Guards.			Infantry Regiments.			Cavalry Depôts.			Depôt Brig. Royal Artillery.		Infantry Depôt Battalions.			Royal Engineers.	Coast Brigade, R. A.	
	Strength	1,222			9,884			9,575			1,238			4,317			29,439			759			4,019		15,576			2,007	1,371	
		Admitted.	Died.	Invalided.	Admitted.	Died.	Invalided.	Admitted.	Died.	Invalided.	Admitted.	Died.	Invalided.	Admitted.	Died.	Invalided.	Admitted.	Died.	Invalided.	Admitted.	Died.	Invalided.	Admitted.	Died.	Admitted.	Died.	Invalided.	Died.	Died.	Invalided.
	Class I.																													
1	Miasmatic Diseases ..	179	3	1	1,914	6	31	1,609	2	39	284	1	3	864	3	14	4,391	19	103	214	3	16	1,134	10	2,927	16	146	1	1	..
2	Enthetic „ ..	155	..	1	3,198	..	26	3,412	..	39	497	..	3	1,320	1	11	8,993	1	32	276	..	..	1,379	1	4,042	4	30	..	1	1
3	Dietic „ ..	4	..	..	48	1	..	80	..	..	8	..	..	26	..	1	123	1	1	7	..	..	20	..	143	1	..	..	..	..
4	Parasitic „ ..	13	..	..	361	..	..	411	..	..	57	..	..	163	..	..	1,339	..	1	35	..	..	151	..	731	..	..	..	..	..
	Class II.																													
1	Diathetic Diseases ..	6	..	..	29	..	1	32	1	..	4	..	..	13	..	..	74	3	8	2	..	1	22	..	36	2	2	3	1	..
2	Tubercular „ ..	13	5	8	130	19	45	124	17	118	12	2	4	110	26	63	475	70	168	6	3	2	183	35	324	67	169	6	13	2
	Class III. Diseases of the—																													
1	Nervous System ..	13	2	1	136	5	47	145	3	72	17	..	4	49	3	13	457	13	86	18	2	7	177	3	387	8	87	4	1	3
2	Circulatory „ ..	..	..	..	44	5	38	45	3	50	11	..	6	20	4	13	210	19	119	6	1	4	67	3	253	8	119	2	4	1
3	Respiratory „ ..	82	3	2	554	1	18	692	11	17	94	..	1	371	4	29	2,106	33	81	67	1	6	706	2	1,364	32	80	..	2	2
4	Digestive „ ..	54	..	..	312	1	33	306	3	40	48	1	5	163	..	1	967	15	37	48	..	3	219	..	653	12	63	..	1	..
5	Urinary „ ..	..	..	..	10	..	1	14	..	8	4	..	..	2	..	..	55	2	4	2	..	..	22	..	89	2	10	1	..	..
6	Reproductive „ ..	5	..	..	150	..	7	129	..	10	21	..	1	10	..	..	234	..	8	7	..	1	72	..	77	..	3	..	..	..
7	Locomotive „ ..	..	..	..	36	..	7	46	..	16	3	..	2	17	..	7	78	1	29	..	..	1	32	..	81	..	12	..	..	1
8	Integumentary „ ..	98	..	1	1,724	..	11	1,215	..	10	189	..	..	400	..	6	3,057	1	18	91	..	1	542	..	1,907	2	28	..	..	2
	Class IV.																													
4	Diseases of Nutrition.	..	..	1	3	..	3	15	..	31	..	..	..	3	..	1	39	..	28	..	..	..	116	..	52	..	20	..	..	..
	Class V.																													
1	Accidents	102	..	..	1,124	3	14	916	5	23	123	..	3	296	3	7	1,828	13	23	65	..	3	347	1	949	6	21	1	3	1
2	Battle	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..
3	Homicide	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	Suicide	..	1	..	2	4	..	1	2	..	..	..	..	..	..	..	4	6	..	..	..	..	..	..	2	6	..	..	..	..
5	Execution	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
6	Corporal Punishment.	..	..	..	13	..	..	13	..	..	8	..	..	3	..	..	56	..	..	..	..	..	4	..	48	..	..	..	..	..
	No appreciable disease	1	..	..	2	..	..	1	..	..	..	..	1	1	..	..	7	..	4	..	..	..	..	..	6	..	2	..	..	..
	Malingering	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	725	14	15	9,791	46	282	9,206	47	473	1,380	4	33	3,831	44	166	24,493	197	757	844	10	45	5,193	55	14,071	167	792	18	27	13

Ratio per 1,000 of Mean Strength.

Orders.		Household Cavalry.			Dragoon Guards and Dragoons.			Royal Artillery.			Military Train.			Foot Guards.			Infantry Regiments.			Cavalry Depôts.			Depôt Brig. Royal Artillery.		Infantry. Depôt Battalions.			Royal Engi-neers.	Coast Brigade, R.A.	
	Strength...	1,222			9,884			9,575			1,238			4,317			29,439			759			4,019		15,576			2,007	1,371	
		Admitted.	Died.	Invalided.	Admitted.	Died.	Invalided.	Admitted.	Died.	Invalided.	Admitted.	Died.	Invalided.	Admitted.	Died.	Invalided.	Admitted.	Died.	Invalided.	Admitted.	Died.	Invalided.	Admitted.	Died.	Admitted.	Died.	Invalided.	Died.	Died.	Invalided.
	Class I.																													
1	Miasmatic Diseases ..	146·5	2·45	·82	193·7	·61	3·14	163·0	·21	2·87	229·4	·81	2·42	200·1	·69	3·24	149·1	·64	3·49	282·0	3·95	21·08	282·2	2·49	187·9	1·02	9·38	·50	·73	..
2	Enthetic ,, ..	126·9	..	·82	323·6	..	2·63	356·3	..	2·87	401·5	..	2·42	305 8	·23	2·55	305·5	·03	1·09	363·6	..	..	343 3	·25	259·5	·26	1·93	.	·73	·73
3	Dietic ,, ..	3·3	..	..	4·8	·10	..	8·4	..	..	6·5	..	..	6·0	..	·23	4·2	·03	·03	9·2	..	..	5·0	..	9·2	·06	..	..	..	..
4	Parasitic ,, ..	10·6	..	..	36·5	..	..	42·9	..	..	46·0	..	..	37·8	..	..	45·5	..	·03	46·1	..	..	37·5	..	46·9	..	..	..	..	..
	Class II.																													
1	Diathetic Diseases ..	4·9	..	..	2·9	..	·10	3·3	·10	..	3·2	..	..	3·0	..	..	2·5	·10	·28	2·6	..	1·32	5·5	..	2·3	·13	·12	1·49	·73	..
2	Tubercular ,, ..	10·6	4·59	6·55	13·2	1·92	4·55	12·9	1·78	8·68	9·7	1·61	3·23	25·5	6·02	14·59	16·1	2·38	5·71	7·9	3·95	2·64	45·4	8·71	20·8	4·30	10·86	2·98	9·48	1·46
	Class III. Diseases of the—																													
1	Nervous System ..	10·6	1·63	·82	13·8	·51	4·75	15·1	·31	5·29	13·7	..	3·23	11·3	·69	3·01	15·5	·44	2·92	23·7	2·64	9·22	44·0	·75	24·9	·51	5·59	1·99	·73	2·19
2	Circulatory ,, ..	..	..	..	4·5	·51	3·84	4·7	·31	3·69	8·9	..	4·84	4·6	·93	3·01	7·1	·64	4·04	7·9	1·32	5 28	16·7	·75	16·2	·51	7·64	1·00	2·92	·73
3	Respiratory ,, ..	67·1	2·45	1·63	56·0	·10	1·82	72·3	1·15	1·25	75·9	..	·81	86·1	·93	6·72	71·5	1·12	2·75	88·3	1·32	7·90	175·6	·50	87·6	2·06	5·14	..	1·46	1·46
4	Digestive ,, ..	44·2	..	..	31·6	·10	3·34	32·0	·31	2·94	38·9	·81	4·04	37·8	..	·23	32·9	·51	1·26	63·2	..	3·95	54·5	..	41·9	·77	4·05	..	·73	..
5	Urinary ,, ..	..	..	..	1·0	..	·10	1·5	..	·59	3·2	..	..	·5	..	..	1·9	·07	·13	2·6	..	..	5·5	..	5·7	·13	·64	·50	..	..
6	Reproductive ,, ..	4·1	..	..	15·2	..	·71	13·5	..	·73	17·0	..	·81	2·3	..	..	8·0	..	·28	9·2	..	1·32	17·9	..	5·0	..	·19	..	..	..
7	Locomotive ,, ..	..	..	..	3·6	..	·71	4·8	..	1·18	2·4	..	1·61	3·9	..	1·62	2·7	·03	·98	..	..	1·32	7·9	..	5·2	..	·77	..	..	·73
8	Integumentary ,, ..	80·2	..	·82	174·4	..	1·11	126·9	..	·73	152·7	..	..	92·7	..	1·39	103·8	·03	·61	119·9	..	1·32	134·9	..	122·5	·13	1·80	..	..	1·46
	Class IV.																													
4	Diseases of Nutrition ..	..	..	·82	·3	..	·30	1·6	..	2·28	..	..	..	·7	..	·23	1·3	..	·95	..	..	..	28·8	..	3·3	..	1·28	..	..	..
	Class V.																													
1	Accidents	83·5	..	..	113·7	·30	1·42	95·7	·52	1·69	99·4	..	2·42	68·5	·69	1·62	62·1	·44	·95	85·7	..	3 95	86·3	·25	60·9	·39	1·35	·50	2·19	·73
2	Battle	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	·07	..	..	..	..	..	..	..	..	..	..	..
3	Homicide	..	..	..	..	·10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	Suicide	..	·82	..	·2	·40	..	·1	·21	..	..	..	..	..	..	..	·1	·20	..	..	..	..	..	..	·1	·39	..	..	..	..
5	Execution	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	·06	..	..	..	..
6	Corporal Punishment ..	..	..	..	1·3	..	..	1·4	..	..	6·4	..	..	·7	..	..	1·9	..	..	..	..	..	1·2	..	3·1	..	..	..	..	..
	No appreciable disease..	·8	..	..	·2	..	..	·1	..	..	..	..	·81	·2	..	..	·2	..	·13	..	..	..	..	..	·4	..	·13	..	..	..
	Malingering	..	..	..	·1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	593·3	11·44	12 28	990 6	4 65	28·52	961·5	4·90	34·79	1114·8	3·23	26·64	387·5	10·18	38·44	831 9	6·66	25·70	1111·9	13·18	59·30	1292·2	13 70	903·4	10·72	50·87	8·96	19·70	9·49

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Miasmatic Diseases have been more prevalent than in the preceding year, among the Household Cavalry, Military Train, Foot Guards, and Depôt Brigade, R.A. On subdividing them into groups, the following results are obtained :—

		Annual Ratio per 1,000 of Mean Strength.								
		Household Cavalry.	Dragoon Guards and Dragoons.	Royal Artillery.	Military Train.	Foot Guards.	Infantry Regiments.	Cavalry Depôts.	Depôt Brigade, Royal Artillery.	Depôt Battalions.
Eruptive Fevers ..	Admitted ..	4·09	·81	3·34	..	·93	1·87	..	9·70	1·80
	Died	1·63	..	..	..	..	·07	..	·25	..
Paroxysmal Fevers ..	Admitted ..	..	3·84	9·50	16·15	1·15	5·64	3·95	16·43	11·88
	Died	..	..	..	..	..	·03	..	..	·06
Continued Fevers ..	Admitted ..	7·36	25·50	21·72	23·42	28·95	14·30	31·62	36·08	20·74
	Died	·81	·51	·10	·80	·23	·34	3·95	·75	·71
Dysentery, Diarrhœa, and Cholera	Admitted ..	14·73	22·06	15·87	21·00	31·97	9·82	44·80	17·42	19·07
	Died	..	..	·10	..	..	·07	..	·50	..
Sorethroat and Influenza	Admitted ..	54·01	58·17	38·75	61·39	62·54	38·38	83·00	82·36	44·62
	Died	..	·10	..	..	·23	..	..	·25	..
Ophthalmia	Admitted ..	4·91	10·83	12·85	13·73	10·89	23·64	22·40	17·91	32·23
	Died	..	..	..	..	..	..	..	..	..
Rheumatism	Admitted ..	50·73	49·27	46·16	82·39	45·40	42·09	68·51	82·36	47·57
	Died	..	..	..	..	·23	·03	..	·50	..

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Eruptive Fevers have been much more prevalent than in 1861, in the Depôt Brigade, R.A. This was caused by the occurrence of a large number of cases of Small Pox and Scarlet Fever during the first half of the year, as already noticed in the remarks upon the sickness in the Dockyards and Arsenals.

Paroxysmal Fevers were considerably in excess of the average in the Military Train, and Depôt Brigade, R.A. The cases were chiefly among men who had contracted a liability to that form of fever during previous service in India.

Continued Fevers were very prevalent in the 9th Brigade, R.A., at Shorncliffe, and the 2nd Division Depôt Brigade, at Woolwich. The medical officers in charge do not assign any reason for this, but it is stated in the Report of the 9th Brigade that "none of the cases were of a severe character, and all terminated in recovery."

Dysentery, Diarrhœa, and Cholera gave rise to a larger proportion of admissions than formerly in the Household Cavalry, Military Train, and Foot Guards. In the Military Train the increase was confined to the 5th Battalion, at Woolwich; in the Foot Guards it was in the 3rd Battalion Grenadier, and 1st Battalion Scots Fusilier, Guards. It is worthy of remark that the 1st Battalion 3rd Foot, which was quartered in the Tower of London—a barrack formerly noted for the amount of diarrhœa among the men—enjoyed a marked exemption from these diseases.

Sorethroat (tonsillitis) and *Influenza* were also much more prevalent than in 1861, in the Household Cavalry, Military Train, and Foot Guards. In the first of these it was chiefly in the 2nd Life Guards; in the Military Train upwards of half of the cases occurred in the 5th Battalion; and in the Foot Guards, the excess was chiefly in the 2nd Battalion Coldstream Guards, and 1st Battalion Scots Fusilier Guards. A large number of cases also were admitted into hospital in the 1st Battalion 2nd Foot, at Aldershot, the 2nd Battalion 25th Foot, at Edinburgh, where they were attributed to the exposed situation of the Castle, and in the 41st Regiment, at Newcastle and Tynemouth. Influenza is stated to have been very prevalent among the civil population, at the three last-named stations, during November and December. If the cases of acute bronchitis be added to those of sorethroat and influenza, the difference of the prevalence of these diseases in the various arms will not be found so marked, except in the Depôt Brigade, R.A., in which they were greatly in excess.

Ratio of Admissions per 1,000 of Mean Strength by *Tonsillitis, Influenza*, and *Acute Bronchitis.*

Household Cavalry.	Dragoon Guards and Dragoons.	Royal Artillery.	Military Train.	Foot Guards.	Infantry Regiments.	Cavalry Depôts.	Depôt Brigade Royal Artillery.	Infantry Depôts.
114	100	97	123	129	96	116	218	104

Ophthalmia.—Although still a source of considerable inefficiency in the Cavalry Depôts, Depôt Battalions, and Infantry Regiments, has undergone a marked reduction compared with the numbers in 1861.

Enthetic Diseases.—In the Military Train, Foot Guards, and Cavalry Depôts, there has been a slight increase of these diseases; the proportion in the Infantry Regiments has been exactly the same as in 1861; and in the Royal Artillery, and its Depôt Brigade, there has been a very marked, and in the Cavalry regiments, and the Depôt Battalions, a slight decrease.

Tubercular Diseases.—There has been a reduction in the mortality by this class of diseases in all the arms except the Foot Guards, the Cavalry Depôts, and the Depôt Brigade, R.A. In the first of these the proportion of deaths is very much higher than in 1861, but this has probably been caused to some extent by the transfer, already noticed, of the weakly men from the

United Kingdom. battalions proceeding on foreign service. This, however, would not account satisfactorily for the whole increase, for if the mortality were calculated upon the strength of the whole brigade, including the battalions in Canada, it would amount to 4·35 per 1,000, or nearly double the proportion in the preceding year.

If the number discharged as invalids on account of tubercular diseases be added to the deaths, the total loss by this class during the year will be found to have been as follows, in each arm of the service :—

Ratio of decrease per 1,000 of Mean Strength by Deaths and Invaliding from Tubercular Diseases.

	Household Cavalry.	Dragoon Guards and Dragoons.	Royal Artillery.	Military Train.	Foot Guards.	Infantry Regiments.	Cavalry Depôts.	Depôt Brigade Royal Artillery.	Coast Brigade Royal Artillery.	Depôt Battalions.
1862 ..	10·64	6·58	12·51	4·85	20·62	8·46	7·91	*	12·40	15·41
1860–61.	5·32	10·53	8·94	11·80	16·88	7·81	9·37		..	14·00

This Table shows a decrease in the total loss by these diseases, compared with the average of the two preceding years, in the Dragoon Guards and Dragoons, Military Train, and Cavalry depôts, but an increase in the other arms. The same leading feature, however, still remains of the very high ratio in the Foot Guards and depôt battalions.

Diseases of the Nervous System continue to furnish a very high relative proportion of admissions from the Depôt Brigade, R.A., and it is also much higher from the cavalry depôts and depôt battalions than from the other arms.

There has been a slight decrease in the amount of *Delirium Tremens*, but an increase in the admissions under the head of Intemperance (*Ebriositas*), except in the Infantry regiments and depôt battalions. The proportion admitted into hospital for these two causes per 1,000 of mean strength was as follows :—

	Ratio per 1,000 of Mean Strength.								
	Household Cavalry.	Dragoon Guards and Dragoons.	Royal Artillery.	Military Train.	Foot Guards.	Infantry Regiments.	Cavalry Depôts.	Depôt Brigade Royal Artillery.	Depôt Battalions.
1862	6·55	5·67	9·82	5·65	6·02	4·35	13·17	10·20	9·69
1861	3·28	5·88	6·39	3·85	4·47	5·65	9·08	5·74	7·74

The present return shows even more strongly than that of 1861 the high proportion of cases the direct result of intemperance among the men of the depôts of the different arms.

Diseases of the Respiratory System have been much more prevalent than in the preceding year, in the Foot Guards, Cavalry Depôts, and Depôt Brigade, R.A., the difference being chiefly in the admissions from bronchitis. We have already noticed this in connection with the prevalence of sorethroat and influenza.

Violent Deaths have been fewer than in 1861 in all the arms, except the Dragoon Guards and Dragoons.

The deaths by suicide have been 4 in the Dragoon Guards and Dragoons,

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* Included in col. 3.

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2 in the Royal Artillery, 6 in the Infantry regiments, and 6 in the depôt battalions. The modes in which they were effected have been already stated.

Corporal Punishment has ranged between 6·4 per 1,000 in the Military Train, and 0·6 in the Foot Guards. In none of the arms, however, except the Military Train and depôt battalions, has it amounted to 2 in every 1,000 of the force.

The sickness, mortality, and invaliding by corps is shown in the following Table :—

Regiments, &c.	Strength.	Admitted into Hospital.	Died.		Total Deaths.	Discharged as Invalids.	Annual Ratio per 1,000.			Stations.
			In Hospital.	Out of Hospital.			Admitted.	Died.	Invalided.	months.
1st Life Gds.	407	180	2	3	5	4	442 ·3	12 ·28	9 ·83	Hyde Park 3 Windsor 9
2nd Life Gds.	405	229	4	2	6	7	565 ·4	14·81	17 ·28	Windsor 3 Regent's Pk. 9
R. Horse Gds.	410	316	3	..	3	4	770 ·7	7 ·32	9 ·75	Regent's Pk. 3 Hyde Park 9
	1,222	725	9	5	14	15	593 ·3	11 ·46	12 ·27	
4th Dr. Gds.	593	840	..	2	2	19	1416 ·5	3 ·37	32 ·04	Dublin and Curragh 9 Dublin 3
5th „	594	548	3	1	4	22	922 ·5	6 ·73	37 ·03	Norwich, Ipswich, Northamptn 4 Dundalk, Belfast, Dublin 4 Dublin 4
6th „	581	657	3	1	4	20	1130 ·8	6 ·88	34 ·42	Exeter 5 Aldershot 7
1st Dragoons	593	496	2	..	2	18	836 ·4	3 ·37	30 ·35	Birming. & Coventry 12
2nd „	580	524	1	2	3	12	903 ·4	5 ·17	20 ·69	Edinburgh, Hamilton, Perth 12
3rd Hussars	593	470	2	..	2	23	792 ·6	3 ·37	38 ·78	Newbridge, Curragh 9 Dublin, Longford, Curragh 3
4th „	468	428	1	3	4	12	914 ·5	8 ·55	25 ·64	Cahir 7 Curragh, Newbridge 5
5th Lancers	600	483	2	..	2	17	805 ·00	3 ·33	28 ·33	Hounslow 7 Aldershot 1 Norwich, &c. 4
9th „	579	486	2	1	3	11	839 ·4	5 ·18	18 ·99	Aldershot 8 Brighton, Shorncliffe 4
10th Hussars	593	470	1	..	1	26	792 ·58	1 ·69	43 ·84	York 12
11th „	587	491	3	..	3	21	836 ·46	5 ·11	35 ·77	Dublin 6 Curragh 2 Cahir, Clonmel, Fermoy 4
12th Lancers	562	686	1	..	1	14	1220 ·7	1 ·78	24 ·91	Aldershot 12
13th Hussars	600	691	4	..	4	15	1151 ·7	6 ·67	25 ·00	Manchester, Preston 5 Aldershot 7

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Regiments, &c.	Strength.	Admitted into Hospital.	Died. In Hospital.	Died. Out of Hospital.	Total Deaths.	Discharged as Invalids.	Annual Ratio per 1,000. Admitted.	Annual Ratio per 1,000. Died.	Annual Ratio per 1,000. Invalided.	Stations.	months.
14th Hussars	592	601	..	2	2	17	1015·2	3·38	28·72	Dundalk Manchester	4 8
15th ,,	594	716	2	1	3	18	1205·4	5·05	30·30	Dublin Curragh Dundalk	5 2 5
16th Lancers	580	504	5	..	5	2	868·9	8·62	3·45	Aldershot Sheffield } Preston }	8 4
18th Hussars	595	700	..	1	1	15	1176·5	1·68	25·21	Brighton } Shorncliffe } Hounslow, &c.	7 5
	9,884	9,791	32	14	46	282	990·6	4·65	28·53		
Rl. Artillery: Horse Brigade	2,082	2,326	5	2	7	..	1117·2	3·36	..	Woolwich, Aldershot, and Ireland	
Riding Establishment	214	266	1	..	1	..	1243·0	4·67	..	Woolwich	
2nd Brigade	932	811	7	..	7	..	870·2	7·51	..	Dover and Channel Islands	
4th ,,	921	792	3	2	5	..	859·9	5·43	..	Aldershot Portsmouth	
5th ,,	921	821	..	3	3	..	891·4	3·26	..	Western District Pembroke Dock	
6th ,,	1,159	950	5	2	7	..	819·7	6·04	..	Portsmouth Guernsey	
8th ,,	1,744	1,537	11	1	12	..	881·3	6·88	..	Ireland	
9th ,,	1,602	1,703	4	1	5	..	1063·1	3·12	..	S. E. District and Leith	
	9,575	9,206	36	11	47	..	961·5	4·91			
Military Train 2nd Battalion	309	328	1	..	1	11	1061·5	3·24	35·60	Woolwich Aldershot	6 6
4th ,,	317	318	1	..	1	9	1003·2	3·15	28·39	Aldershot	12
5th ,,	304	411	1	..	1	4	1352·0	3·29	13·78	Woolwich	12
6th ,,	308	323	1	..	1	9	1048·7	3·25	29·22	Curragh } Dublin }	12
	1,238	1,380	4	..	4	33	1114·7	3·23	26·65		
Gren. Gds., 2nd Bat. ..	875	864	3	5	8	32	987·4	9·14	36·57	London Windsor London	3 5 4
3rd Bat. ..	856	768	2	2	4	41	897·2	4·67	47·90	London Aldershot London	6 1 5
Coldm. Gds., 1st Bat. ..	861	575	6	2	8	12	667·8	9·29	13·93	Dublin London Aldershot Windsor	3½ 3½ 1 4
2nd Bat. ..	862	794	10	2	12	29	921·1	13·92	33·64	London	12
Scots F. Gds., 1st Bat. ..	863	830	10	2	12	52	961·8	13·90	60·25	Windsor London	3 9
	4,317	3,831	31	13	44	166	887·4	10·19	38·45		

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Regiments, &c.	Strength.	Admitted into Hospital.	Died. In Hospital.	Died. Out of Hospital.	Total Deaths.	Discharged as Invalids.	Annual Ratio per 1,000. Admitted.	Annual Ratio per 1,000. Died.	Annual Ratio per 1,000. Invalided.	Stations.	months.
1st Foot, 2nd Bat.	850	666	3	..	3	7	783·5	3·53	8·23	Manchester Aldershot	4½ 7½
2nd Foot, 1st Bat.	824	810	2	2	4	29	983·0	4·85	35·19	Portsmouth Aldershot	2 10
3rd Foot, 1st Bat.	877	782	7	2	9	12	891·7	10·26	13·68	London	12
5th Foot, 1st Bat.	840	567	5	3	8	43	675·0	9·52	51·19	Portsmouth Aldershot	5½ 6½
8th Foot, 1st Bat.	871	656	5	4	9	25	753·2	10·33	28·70	Aldershot Sheffield Weedon Bradford	7 5
10th Foot, 1st Bat.	847	468	6	2	8	17	552·54	9·44	20·07	Shorncliffe Dublin	4½ 7½
11th Foot, 1st Bat.	852	655	4	2	6	19	768·78	7·04	22·30	Dublin Curragh Cork	6 3 3
12th Foot, 2nd Bat.	827	532	5	1	6	14	643·29	7·25	17·73	Cork Curragh	5 7
18th Foot, 2nd Bat.	853	638	3	1	4	15	747·95	4·69	17·58	Portsmouth Channel Isles	5 7
19th Foot, 2nd Bat.	848	544	1	4	5	13	641·51	5·89	15·33	Curragh Newry Enniskillen	9 3
20th Foot, 2nd Bat.	858	793	6	1	7	15	924·2	8·16	17·48	Aldershot Portsmouth	8½ 3½
21st Foot, 2nd Bat.	857	580	6	1	7	4	676·8	8·17	4·67	Shorncliffe Dublin	3 9
24th Foot, 1st Bat.	837	842	4	..	4	34	1006·0	4·78	40·62	Portsmouth Aldershot	9 3
25th Foot, 2nd Bat.	853	779	3	..	3	45	913·2	3·52	52·76	Shorncliffe Edinburgh	5 7
26th Foot ..	848	574	8	1	9	20	676·9	10·61	23·58	Edinburgh Aldershot	4½ 7½
29th ,, ..	825	591	5	1	6	23	716·4	7·27	27·88	Aldershot Glasgow Ayr	5 7
32nd ,, ..	844	906	6	..	6	19	1073·5	7·11	22·51	Plymouth	12
36th ,, ..	875	605	2	..	2	5	691·4	2·28	5·71	Kilkenny Waterford Curragh Dublin	5½ 3½ 3
37th ,, ..	799	1,111	3	2	5	3	1390·5	6·26	3·75	Devonport Aldershot	6 6
41st ,, ..	844	930	6	..	6	21	1101·9	7·11	24·88	Isle of Wight Sheffield Newcstl &c	1 11
45th ,, ..	830	721	4	..	4	43	868·7	4·82	51·80	Aldershot Dublin	1 11
49th ,, ..	843	655	4	3	7	12	770·0	8·30	14·23	Portsmouth Manchester	5 7
53rd ,, ..	810	551	2	3	5	12	680·2	6·17	14·81	Aldershot Portsmth, &c.	4½ 7½
55th ,, ..	848	708	3	..	3	42	834·9	3·54	49·52	Channel Isles Portsmouth	5 7
58th ,, ..	824	490	3	2	5	14	594·7	6·07	16·99	Newcastle, &c. Curragh Dublin	1 8 3
59th ,, ..	799	621	8	1	9	26	777·2	11·26	32·54	Dover	12

United Kingdom.

Regiments, Depôt Battalions, &c.	Strength.	Admitted into Hospital.	Died.		Total Deaths.	Discharged as Invalids.	Annual Ratio per 1,000.			Stations.	
			In Hospital.	Out of Hospital.			Admitted.	Died.	Invalided.		months.
60th Foot 1st Bat.	842	857	5	2	7	17	1017 ·8	8 ·31	20 ·19	Aldershot	12
61st Foot ..	823	726	1	1	2	33	882 ·1	2 ·43	40 ·09	Aldershot	12
64th ,, ..	821	867	3	1	4	25	1056 ·0	4 ·87	30 ·45	Dover Aldershot	4½ 7½
73rd ,, ..	822	652	2	1	3	19	793 ·2	3 ·65	23 ·11	Devonport	12
76th ,, ..	884	1,127	4	2	6	34	1274 ·9	6 ·79	38 ·46	Glasgow Aldershot	5 7
78th ,, ..	843	698	1	2	3	17	828 ·0	3 ·56	20 ·17	Aldershot Shorncliffe	4½ 7½
84th ,, ..	835	827	3	..	3	30	990 ·4	3 ·59	35 ·93	Aldershot Shorncliffe	4½ 7½
86th ,, ..	846	422	6	1	7	11	498 ·8	8 ·27	13 ·00	Dublin Curragh Waterford Kilkenny	4½ 4½ 3
87th ,, ..	840	542	10	2	12	39	645 ·2	14 ·28	46 ·42	Dublin Curragh	3 9
	29,439	24,493	149	48	197	757	832 ·0	6 ·69	25 ·71		
Cavalry Deps:											
Canterbury	482	634	4	1	5	30	1315 ·4	10 ·37	62 ·24	Canterbury	
Maidstone.	277	210	4	1	5	15	758 ·1	18 ·05	54 ·15	Maidstone	
	759	844	8	2	10	45	1112 ·0	13 ·17	59 ·29		
R.A. Dep. Bde. 1st Division.	1,005	703	6	2	8	..	699 ·5	7 ·96	..	Sheerness Shoeburyness	
2nd ,, ..	1,304	2,352	8	..	8	..	1803 ·7	6 ·13	..	Woolwich	
3rd ,, ..	830	785	5	..	5	..	945 ·8	6 ·02	..	Warley	
4th ,, ..	880	1,353	26	8	34	..	1537 ·5	38 ·63	..	Woolwich	
	4,019	5,193	45	10	55	..	1292 ·2	13 ·69	..		
1st Dep. Bat.	667	573	9	2	11	28	859 ·1	16 ·49	41 ·98	Chatham	
2nd ,, ..	894	776	7	..	7	33	868 ·0	7 ·83	36 ·91	Chatham	
3rd ,, ..	626	671	6	1	7	9	1071 ·9	11 ·18	14 ·38	Chatham	
4th ,, ..	461	588	9	2	11	21	1275 ·5	23 ·86	45 ·55	Canterbury	
5th ,, ..	757	713	4	2	6	55	941 ·9	7 ·93	72 ·65	Isle of Wight	
6th ,, ..	635	757	10	2	12	11	1192 ·2	18 ·90	17 ·32	Walmer	
7th ,, ..	806	966	5	..	5	64	1198 ·5	6 ·20	79 ·40	Winchester	
8th ,, ..	626	588	4	..	4	60	939 ·3	6 ·39	95 ·85	Pembroke	
9th ,, ..	833	803	12	1	13	21	964 ·0	15 ·61	25 ·21	Colchester	
10th ,, ..	680	747	12	..	12	45	1098 ·5	17 ·65	66 ·18	Colchester	
11th ,, ..	732	816	7	3	10	41	1114 ·8	13 ·66	56 ·01	Preston	
12th ,, ..	693	782	7	1	8	27	1128 ·4	11 ·54	38 ·96	Athlone	
13th ,, ..	593	484	2	2	4	20	816 ·2	6 ·74	33 ·73	Birr	
14th ,, ..	654	645	2	..	2	30	986 ·2	3 ·06	45 ·87	Belfast	
15th ,, ..	667	502	6	1	7	40	752 ·6	10 ·49	59 ·97	Buttevant	
16th ,, ..	872	614	8	..	8	36	704 ·1	9 ·17	41 ·28	Templemore	
17th ,, ..	804	869	6	2	8	47	1080 ·9	9 ·95	58 ·46	Limerick	
18th ,, ..	835	511	6	1	7	65	612 ·0	8 ·38	77 ·84	Fermoy	
19th ,, ..	611	305	3	2	5	24	499 ·2	8 ·18	39 ·28	Fermoy	
20th ,, ..	821	434	4	1	5	21	528 ·6	6 ·09	25 ·58	Cork	
21st ,, ..	395	242	2	1	3	32	612 ·7	7 ·59	81 ·01	Chichester	
22nd ,, ..	455	340	4	1	5	30	747 ·2	10 ·99	65 ·93	Stirling	
23rd ,, ..	459	345	6	1	7	32	751 ·6	15 ·25	69 ·72	Aberdeen	
	15,576	14,071	141	26	167	792	903 ·4	10 ·72	50 ·85		

United Kingdom.

In the Household Cavalry, the Royal Horse Guards still continue to furnish the highest proportion of cases.

In the Cavalry of the Line, the admissions were much above the average in the 4th Dragoon Guards, at Dublin and the Curragh, 12th Lancers, at Aldershot, 15th Hussars, at Dublin, the Curragh, and Dundalk, 18th Hussars at Brighton and Hounslow, 13th Hussars at Manchester and Preston, and at Aldershot, and the 6th Dragoon Guards, at Exeter and Aldershot; while in the 3rd Hussars, at Newbridge and Dublin, the 10th Hussars, at York, and the 5th Lancers, at Hounslow, Aldershot, and Norwich, they were much below it.

The Coldstream Guards show a lower ratio of admissions than the other two regiments, but as they did not furnish a battalion to the brigade sent out to Canada, they did not labour under the same disadvantage as the others, in having the proportion of weakly men increased by their transfer to the battalions remaining at home.

The regiments of Infantry having the largest number of admissions into hospital were the 37th, at Devonport and Aldershot; the 76th, at Glasgow and Aldershot; the 41st, at Sheffield and Newcastle; the 32nd, at Devonport; the 64th, at Dover and Aldershot; the 1st Battalion 60th, at Aldershot; and the 1st Battalion 24th, at Portsmouth and Aldershot. Those furnishing the smallest proportion were the 86th, at Dublin and the Curragh; the 58th, at the Curragh and Dublin; and the 10th, at Shorncliffe and Dublin.

RE-VACCINATION.

The returns of vaccination show the results in 1,690 soldiers serving at home and 3,623 recruits, who were vaccinated during the year to have been as follows. The numbers in each class are stated in Abstract No. II. of Appendix:—

	Total number Vaccinated.	Results.	Ratio per 1,000.				
			In those who bore marks of previous Small-Pox.	In those who bore good marks of previous Vaccination.	In those who bore doubtful marks of previous Vaccination.	In those who bore no marks of previous Vaccination or Small-pox.	Total.
Soldiers, not Recruits	1,690	A perfect Vaccine Pustule	218·54	237·09	360·49	521·28	312·43
		A modified ditto	205·30	328·64	311·11	209·22	293·49
		A failure in	576·16	434·27	328·40	269·50	394·08
		Total..	1000·	1000·	1000·	1000·	1000·
Recruits ..	3,623	A perfect Vaccine Pustule	385·18	417·87	481·75	524·75	429·20
		A modified ditto	229·64	230·91	244·53	214·52	230·47
		A failure in	385·18	351·22	273·72	260·73	340·33
		Total..	1000·	1000·	1000·	1000·	1000·

These results are not very different from those in the Report for the preceding year, so far as regards the recruits, but they show a much smaller proportion of perfect vaccine pustules among the soldiers, and a larger proportion of failures. Vaccination appears, however, to have been more successful than formerly among those who bore no marks of having undergone that operation or of having had small-pox.

The number of cases of small-pox admitted into hospital during the year was 64, of which 4 died, in a force of 78,173 men. All the cases are stated to have borne marks of vaccination.

In 4,603 recruits found fit for service at the head-quarters of the different recruiting districts, the condition as regards vaccination was as follows:—

United Kingdom.

Recruiting Districts.	Marks of Small Pox.	Marks of Vaccination.	No satisfactory Marks.	Proportion in every 1,000.		
				Marks of Small Pox.	Marks of Vaccination.	No Marks.
London	41	1,156	57	33	922	45
Liverpool	72	469	43	123	803	74
Bristol	56	573	48	83	846	71
York and Leeds ..	55	474	33	98	843	59
Edinburgh	20	170	26	93	787	120
Glasgow	109	503	16	174	801	25
Belfast	9	134	2	62	924	14
Dublin	37	307	15	103	855	42
Cork	9	165	4	51	927	22
Total England ..	224	2,672	181	73	868	59
Scotland ..	129	673	42	153	797	50
Ireland ..	55	606	21	81	888	31
Total ..	408	3,951	244	89	858	53

This Table shows exactly the same proportion as in last Report of men bearing marks of small-pox, but a somewhat larger proportion bearing marks of vaccination. The proportion of men wholly unprotected was much lower in Ireland than in either England or Scotland; the districts in which the proportion was highest being Edinburgh, Liverpool, and Bristol. If this may be assumed to represent correctly the state of vaccination among the class of population from which the recruits are mainly drawn, it would seem to show the necessity for some stringent measure to enforce the adoption of so simple and effectual a prophylactic against small-pox.

Section II.

On the Extent of Invaliding.

The number of men discharged as invalids, and the classes of diseases by which their disability was occasioned, have already been shown in the Tables of sickness by arms of the service; the following summary shows the results for 1862, compared with the average of the two preceding years:—

		Troops generally.	Household Cavalry.	Dragoon Guards and Dragoons.	Royal Artillery (including the Depôt Brigade.)	Military Train.	Foot Guards.	Infantry Regiments.	Cavalry Depôts.	Depôt Battalions.
Strength		78,173	1,222	9,884	14,965	1,238	4,317	29,439	759	15,576
1862..	Number discharged as Invalids	3,226	15	282	486	33	166	757	45	792
	Ratio per 1,000 ..	41 ·27	12 ·27	28 ·53	31 ·01	26 ·66	38 ·45	25 ·71	59 ·29	50 ·85
1860–61, Ratio per 1,000		51 ·19 *	11 ·46	35 ·44	20 ·59	30 ·51	26 ·44	28 ·35	56 ·9	49 ·33

* The ratio for 1861 only.

United Kingdom.

There has been an increase in the extent of invaliding from the Household Cavalry, Royal Artillery, and Foot Guards, but in these arms it was comparatively low during the preceding year, when the others furnished a proportion greatly above the average. The circumstances which gave rise to the marked increase in the Foot Guards, have been already noticed.

Section III.

On the Number constantly Sick in Hospital of the Troops serving in the United Kingdom.

The average number constantly sick per 1,000 of mean strength, the average sick time to each soldier serving, and the average duration of the cases under treatment in hospital, are shown in the following Table for the troops generally, and for the different arms of the service :—

		Troops generally.	Household Cavalry.	Cavalry of the Line.	Royal Artillery.	Military Train.	Foot Guards.	Infantry Regiments.	Cavalry Depôts.	Depôt Brigade Royal Artillery.	Depôt Battalions.
Mean Daily Sick per 1,000 of strength ..	1862..	53·45	33·21	43·62	50·62	54·23	57·12	45·65	50·47	79·47	47·63
	1860–1	54·63	30·01	42·59	57·34	56·15	51·86	47·11	63·08	87·06	54·66
		Days.	Days.	Days.	Days.	Days.	Days.	Days.	Days.	Days.	Days.
Average Sick Time to each Man in the course of the Year	1862	19·50	12·12	15·92	18·48	19·79	21·34	16·66	18·42	29·01	17·38
	1860–1	19·94	10·96	15·54	20·93	20·49	18·93	17·20	23·02	31·78	19·95
Average duration of the Cases	1862	19·72	20·43	16·07	19·22	17·76	24·04	20·03	16·56	22·45	19·24
	1860–1	19·18	20·40	16·41	20·38	19·84	24·42	19·64	16·64	23·83	19·48

This Table shows a considerable decrease in the mean daily sick of the Royal Artillery and all the depôts, and an increase in the Foot Guards, and a corresponding change in the average sick time to each man serving. In the Royal Artillery, and Depôt Brigade, R.A., there has also been a reduction in the duration of the cases under treatment, but scarcely any difference from the previous average in the Cavalry depôts and depôt battalions. In the Foot Guards, though the average sick time to each soldier has been two and a half days greater, the duration of the cases has been one-third of a day less than formerly.

Section IV.

On the Influence of Age on the Mortality of Troops serving in the United Kingdom.

The number of men serving in the different arms, arranged by ages in quinquennial periods, and the deaths at each age, are stated in Abstract No. III. of Appendix, from which the following ratios have been calculated :—

United Kingdom.

Corps.	Annual Ratio of Deaths per 1,000 Living at the following Ages —					
	Under 20.	20–24.	25–29.	30–34.	35–39.	40 and upwards.
Household Cavalry	..	8·67	6·97	14·78	12·66	29·63
Dragoon Guards and Dragoons	1·20	3·12	6·13	7·49	9·42	19·48
Royal Artillery	1·31	3·24	6·88	9·24	21·05	..
Military Train	..	1·71	3·04	..	50·00	58·82
Foot Guards..	13·23	10·24	8·21	12·38	8·43	18·18
Infantry Regiments	2·03	5·55	8·16	9·74	12·28	13·29
Cavalry Depôts, Depôt and Coast Brigades Royal Artillery, and Depôt Battalions	4·89	9·80	11·80	16·01	23·59	28·05
Ditto, ditto, 1859-61	6·10	11·58	13·30	19·17	31·35	38·85
Average of preceding, exclusive of all Depôts..	2·36	4·86	7·46	9·65	12·15	18·43
Ditto, ditto, 1859-61	3·57	7·22	9·27	13·16	15·45	22·05
Civil Male Population — England and Wales ..	7·41	8·42	9·21	10·23	11·63	13·55
Civil Male Population — Healthy Districts. ..	5·83	7·30	7·93	8·36	9·	9·86

This Table shows that the reduction in the mortality has not been confined to men at any particular period of life. The mortality, on the average of three years, has been lower than in civil life under 25 years of age—the same as in civil life between 25 and 30, and considerably higher at the more advanced ages. This remark applies, however, only to the regiments, the results for the depôts being too much affected by the number of men sent home from the service companies, to admit of a fair comparison.

Section V.

On the Recruiting for the Army.

1. HEAD-QUARTERS OF RECRUITING DISTRICTS.

The total number of recruits inspected at the head-quarters of the recruiting districts during the year was 7,684, and of these, 3,081, or 401 per 1,000, were deemed unfit for military service by the inspecting Medical Officers. Of the whole number, 5,453 were primary, and 2,231 secondary inspections, and the rejections in each were 2,518 and 563, being in the ratio of 462 and 252 per 1,000 respectively. These show a slight increase upon the results for 1861, when the primary rejections were 451, and the secondary 237 per 1,000. As, however, the number inspected in 1862 was one-third less than in the preceding year, it seems probable that the smaller demand for men may have enabled the Medical Officers to exercise greater strictness in the selection.

The number examined, and proportion rejected in each district, are shown in the following Table, compiled from Abstract No. IV. of Appendix :—

United Kingdom.

Districts.	Total Number of Recruits Inspected.	Ratio found unfit for Service of every 1,000 Recruits.			
		Primary Inspections.	Secondary Inspections, previously examined by		Total.
			Army Surg.	Civilians.	
London	2,322	493	169	283	460
Liverpool	1,071	543	219	332	455
Bristol	967	334	218	292	300
York and Leeds ..	712	357	96	149	211
Edinburgh	349	412	..	179	381
Glasgow	979	360	..	200	359
Belfast	677	505	429	279	470
Dublin	312	565	170	330	429
Cork	295	295	..	348	508
Total ..	7,684	462	178	268	401
Ratio in 1861	..	451	155	259	377

On comparing the proportion rejected in each district in 1861 and 1862, there will be found a marked increase in Liverpool, Belfast, and Cork, and a great decrease in Glasgow ; the difference in the other districts is not greater than might probably be expected where the numbers are limited.

The native countries of the recruits inspected are shown in the following Table, prepared from Abstract No. V. of Appendix :—

Native Countries of Recruits.	Inspected.	Rejected.	Ratio per 1,000 Rejected.	
			1862.	1860-1.
England	4,084	1,615	395	277
Wales	90	25	278	242
Scotland	1,156	429	371	354
Ireland	2,311	995	431	285
British Colonies and Foreign Countries .	43	17	395	322
Total ..	7,684	3,081	401	293

From this it appears that, with the exception of Wales, the numbers from which are very limited, the rejections have been lowest among the natives of Scotland, and highest among those of Ireland. In the two preceding years they had been considerably higher among the Scotch than any other recruits.

The relative proportion of recruits furnished by each country was as follows :—

	Of every 1,000 Recruits Inspected.			
	England and Wales.	Scotland.	Ireland.	The Colonies and Foreign Countries.
1862 ..	543	150	301	6
1860-1	555	122	317	6

Thus, in 1862 there has been an increase in the proportion of Scotch, and a decrease in that of English and Irish recruits.

The number enlisted for each arm of the Service, and the proportion rejected, were as follows :—

United Kingdom.

Corps.	Primary Inspections.			Secondary Inspections.		
	Inspected.	Rejected.	Ratio per 1,000 Rejected.	Inspected.	Rejected.	Ratio per 1,000 Rejected.
Cavalry	1,356	672	496	150	29	193
Artillery	842	448	580	824	256	311
Engineers ..	260	110	423	65	8	123
Military Train ..	64	30	469	34	7	206
Foot Guards ..	144	36	250	1	..	..
Infantry of Line..	2,787	1,222	438	1,157	263	227
Total ..	5,453	2,518	462	2,231	563	252

These results correspond closely with those for 1861, the rejections being most numerous for the Artillery, and lowest for the Foot Guards, and in both years the rejections for the Cavalry have been higher than for the Infantry.

The causes of rejection of the recruits found unfit for service at the primary and secondary inspections respectively, are classified in the following Table :—

United Kingdom.

Return showing the Number of Recruits rejected during the Year 1862, with the Causes arranged in Classes, and the Ratio per 1000 in each Class.

Class.	Causes of Rejection, in Classes.	Primary Inspections.						Total.		Secondary Inspections.						Total.	
		3,266		1,275		912		5,453		1,806		53		372		2,231	
		England.		Scotland.		Ireland.		United Kingdom.		England.		Scotland.		Ireland.		United Kingdom.	
		Number Rejected.	Ratio per 1,000.	Number Rejected.	Ratio per 1,000.	Number Rejected.	Ratio per 1,000.	Number Rejected.	Ratio per 1,000.	Number Rejected.	Ratio per 1,000.	Number Rejected.	Ratio per 1,000.	Number Rejected.	Ratio per 1,000.	Number Rejected.	Ratio per 1,000.
1	Syphilis	53	16·23	9	7·06	12	13·16	74	13·57	14	7·75	..	..	2	5·38	16	7·17
2	Other Zymotic Diseases	8	2·45	..	..	..	..	8	1·47	2	1·11	..	..	..	..	2	·90
3	Scrofula	37	11·33	5	3·92	10	10·97	52	9·54	6	3·32	..	..	1	2·69	7	3·14
4	Phthisis	28	8·57	..	..	5	5·48	33	6·05	4	2·22	..	..	..	..	4	1·79
5	Other Constitutional Diseases	..	..	3	2·35	..	..	3	·55	1	·55	..	..	..	..	1	·45
6	Diseases of Brain, Spinal Cord, and Nerves ..	..	..	..	..	1	1·10	1	·18	..	..	..	..	1	2·69	1	·45
7	Diseases of Eyes and Eyelids	127	38·90	26	20·39	49	53·73	202	37·04	48	26·58	..	..	10	26·88	58	26·00
8	Diseases of Nose and Mouth	1	·31	..	..	..	..	1	·18	..	..	..	..	[illegible]	5·38	2	·90
9	Diseases of Ears	4	1·22	2	1·57	1	1·10	7	1·28	1	·55	1	18·87	1	2·69	3	1·34
10	Deafness	9	2·75	..	..	2	2·19	11	2·02	1	·55	..	..	..	..	1	·45
11	Impediment of Speech	4	1·22	2	1·57	1	1·10	7	1 28	..	..	..	..	..	..	..	..
12	Disease of Heart	111	33·99	8	6·27	16	17·54	135	24·76	22	12·18	..	..	9	24·19	31	13·89
13	Disease of Arteries (Aneurism)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
14	Disease of Veins (Varix)	97	29·70	55	43·14	73	80·04	225	41·26	34	18·83	..	..	12	32·26	46	20·62
15	Disease of Lungs (except Phthisis)	2	·61	2	1·57	9	9·87	13	2·38	1	·55	..	..	5	13·44	6	2·69
16	Small or Malformed Chest, and Curvature of Spine	158	48·38	66	51·77	51	55·92	275	50·43	19	10·52	2	37·73	15	40·32	36	16·14
17	Loss or Decay of many Teeth	60	18·37	6	4·70	10	10·97	76	13·94	33	18·27	..	..	1	2·69	34	15·24
18	Hernia	43	13·17	9	7·06	3	3·29	55	10·09	14	7·75	..	..	..	..	14	6·27
19	Laxity of Abdominal Rings, showing tendency to Hernia	41	12·55	2	1·57	28	30·70	71	13·02	12	6·65	..	..	8	21·50	20	8·96
20	Hæmorrhoids	25	7·65	1	·78	..	..	26	4·77	22	12·18	..	..	1	2·69	23	10·31

United Kingdom.

RETURN, &c.—*continued.*

Class.	Causes of Rejection, in Classes.	Primary Inspections.						Total.		Secondary Inspections.						Total.	
		England.		Scotland.		Ireland.		United Kingdom.		England.		Scotland.		Ireland.		United Kingdom.	
		Number Rejected.	Ratio per 1,000.	Number Rejected.	Ratio per 1,000.	Number Rejected.	Ratio per 1,000.	Number Rejected.	Ratio per 1,000.	Number Rejected.	Ratio per 1,000.	Number Rejected.	Ratio per 1,000.	Number Rejected.	Ratio per 1,000.	Number Rejected.	Ratio per 1,000.
21	Diseases of the Urinary Organs	5	1·53	..	..	..	..	5	·92	..	..	..	..	..	..	..	..
22	Varicocele	144	44·09	57	44·71	46	50·44	247	45·30	25	13·84	..	..	4	10·75	29	13·00
23	Hydrocele	4	1·22	2	1·57	..	..	6	1·10	3	1·66	..	..	..	..	3	1·34
24	Other Diseases of the Genital Organs (not Venereal)	14	4·29	2	1·57	9	9·87	25	4·58	5	2·77	..	..	1	2·69	6	2·69
25	Muscular Tenuity	144	44·09	88	69·02	37	40·57	269	49·33	39	21·60	..	..	6	16·13	45	20·17
26	Debility	6	1·84	2	1·57	9	9·87	17	3·12	3	1·66	..	..	1	2·69	4	1·79
27	Defects of Upper Extremities, from Fracture, Contraction, Luxation, &c.	22	6·74	9	7·06	13	14·25	44	8·07	13	7·20	1	18·87	3	8·06	17	7·62
28	Defects of Lower Extremities, from Fracture, Contraction, Luxation, &c.	149	45·62	42	32·94	56	61·40	247	45·30	59	32·67	1	18·87	10	26·88	70	31·38
29	Diseases of Joints	3	·92	..	..	2	2·19	5	·92	..	..	..	..	1	2·69	1	·45
30	Other Affections of Bones and Muscles	12	3·67	..	..	5	5·48	17	3·12	2	1·11	..	..	1	2·69	3	1·34
31	Ulcers, Wounds, and Cicatrices	60	18·37	16	12·55	7	7·67	83	15·22	21	11·63	..	..	2	5·38	23	10·31
32	Other Affections of the Cutaneous System ..	9	2·75	18	14·12	1	1·10	28	5·13	2	1·11	..	..	1	2·69	3	1·34
33	Weakness of Intellect	7	2·14	3	2·35	5	5·48	15	2·75	8	4·43	..	..	2	5·38	10	4·48
34	Malformation of Ears	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
35	" Nose and Mouth	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
36	" Chest and Spine	57	17·45	5	3·92	2	2·19	64	11·74	6	3·32	1	18·87	..	..	7	3·14
37	" Urinary and Genital Organs ..	1	·31	..	..	..	..	1	·18	..	..	..	..	..	..	..	..
38	Marks of Punishment or of letters D and B C ..	17	5·21	3	2·35	4	4·39	24	4·40	4	2·22	..	..	3	8·06	7	3·14
39	Unsound Health, Marks of Cupping, Blistering, &c.	89	27·25	32	25·10	25	27·41	146	26·77	20	11·07	3	56·60	7	18·81	30	13·45
	Total	1551	474·89	475	372·55	492	539·47	2518	461·76	444	245·85	9	169·81	110	295·70	563	252·35

United Kingdom.

On comparing this with the corresponding Table in the Report for 1861, it will be found that there has been a considerable increase in the rejections for diseases of the eyes and eyelids, loss and decay of many teeth, varicocele, and muscular tenuity; while there has been a marked decrease in scrofula, malformation of chest and spine, unsound health as shown by marks of treatment, and in hernia. Diseases of the eyes and eyelids continue a much more frequent cause of rejection in Ireland than in England or Scotland. The groups of disabilities which have given rise to the highest proportion of rejections, have been small and malformed chest, muscular tenuity, defects of lower extremities from fracture, &c., varicocele, varicose veins of the legs, and diseases of the eyes and eyelids; indeed these were the cause of more than half of the rejections.

The following Table, prepared from Abstract No. VI. of Appendix, shows the proportion of recruits at different ages in the total number inspected:—

	Boys under 17.	17 to 18.	18 to 19.	19 to 20.	20 to 21.	21 to 22.	22 to 23.	23 to 24.	24 to 25.	25 and upwards.
Proportion in 10,000	439	372	2,603	1,701	1,243	960	773	635	740	534

Compared with the results for 1861, there has been a decrease in the proportion enlisted between 17 and 18 and above 25 years of age. At all the other ages the proportion is higher than in that year, but particularly between 19 and 20, and boys under 17, for drummers and musicians.

During the year 1862 the minimum height of recruits was 5 feet 6 inches, except for the Military Train, and Artillery and Engineer Drivers, for the former of which 5 feet 3 inches, and the latter 5 feet 4 inches, was the minimum. As the number of men required for these corps was very limited, any deductions respecting the height of recruits must be limited to those of 5 feet 6 inches and upwards.

The number of recruits inspected, arranged according to height, is stated in Abstract No. VI. of Appendix. The following summary shows the proportion in 10,000 at each height:—

	Ft.	In.		Ft.	In.	
Under	5	3				419
	5	3	to	5	4	66
	5	4	„	5	5	592
	5	5	„	5	6	816
	5	6	„	5	7	3,105
	5	7	„	5	8	2,358
	5	8	„	5	9	1,308
	5	9	„	5	10	767
	5	10	„	5	11	350
	5	11	„	6	0	150
	6	0	and upwards			69

Omitting those under 5 feet 6 inches, as being exceptional, and likely to be influenced by local causes, the proportion of recruits at each height, examined in the English, Scotch, and Irish districts respectively, during the three years 1860–62, was as follows:—

	Proportion in 10,000.		
Ft. In. Ft. In.	English Districts.	Scotch Districts.	Irish Districts.
5 6 to 5 7	3,607	3,233	3,482
5 7 „ 5 8	2,763	2,849	2,760
5 8 „ 5 9	1,692	1,836	1,797
5 9 „ 5 10	993	1,061	1,030
5 10 „ 5 11	583	569	614
5 11 „ 6 0	258	258	226
6 0 and upwards	104	194	91

United Kingdom.

The most striking point in this Table is the relatively high proportion of tall men in the Scotch districts, and the small proportion of men above 5 feet 11 inches in the Irish. The proportion from 5 feet 6 in. to 5 feet 7 in. is greatest in the English districts. The proportion of men of 5 feet 9 inches and upwards in each group is 1,938, 2,082, and 1,961 respectively.

The following Table, compiled from Abstract No. VII. of Appendix, shows the proportion of men at the different weights enlisted during 1862:—

	lbs.		lbs.	
Under	100			411
From	100	to	110	117
,,	110	,,	120	1,183
,,	120	,,	130	2,458
,,	130	,,	140	2,831
,,	140	,,	150	1,791
,,	150	,,	160	805
,,	160	,,	170	330
,,	170 and upwards			74
				10,000

The state of education among the recruits is shown in the following summary of Abstract No.VIII. of Appendix:—

Of every 1,000 Recruits Examined.	Unable to Read or Write.	Able to Read only.	Able to Read and Write.
In English Districts	239	37	724
In Scotch ,,	163	157	680
In Irish ,,	322	104	578
Total	240	68	691

Compared with the results for 1861, there is a decrease in the proportion of uneducated in England, but scarcely any difference in Scotland and Ireland. In the young men liable to be enrolled in the French army in the five years 1855-59,* the state of education was ascertained to be—

Unable to read or write	318	per 1,000.
Able to read only	32	
Able to read and write	650	

So that the proportion wholly uneducated is higher than among the recruits for the British army.

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* See "Statistique de la France," deuxième série, tom. xi.

The occupations of the recruits examined in 1862, arranged in classes, are shown in the following Table :— *United Kingdom.*

Occupations of Recruits.		England.		Scotland.		Ireland.		Total.	
		Number Examined.	Ratio per 1,000 of each Class Rejected.	Number Examined.	Ratio per 1,000 of each Class Rejected.	Number Examined.	Ratio per 1,000 of each Class Rejected.	Total Number Examined.	Total Ratio per 1,000 of each Class Rejected.
1. Labourers, Husbandmen, and Servants	Number inspected	2,512	..	427	..	825	..	3,764	..
	,, rejected	957	381	138	323	388	470	1,483	394
2. Manufacturing Artisans (as Clothworkers, Weavers, Lace Makers, &c.)	,, inspected	817	..	228	..	231	..	1,276	..
	,, rejected	362	443	92	404	126	545	580	455
3. Mechanics employed in Occupations favourable to physical development (as Carpenters, Smiths, Masons, &c.)	,, inspected	946	..	566	..	68	..	1,580	..
	,, rejected	371	392	217	383	37	544	625	396
4. Shopmen and Clerks.. ..	,, inspected	539	..	101	..	47	..	687	..
	,, rejected	247	458	37	366	22	468	306	445
5. Professional Occupations, Students	,, inspected	33	..	3	..	14	..	50	..
	,, rejected	13	394	..	..	6	429	19	380
6. Boys	,, inspected	225	..	3	..	99	..	327	..
	,, rejected	45	200	..	..	23	232	68	208
Total Inspected		5,072	..	1,328	..	1,284	..	7,684	..
Total Rejected		1,995	393	484	364	602	469	3,081	401

United Kingdom.

The results do not differ materially from those for 1861, except in the high ratio of shopmen and clerks rejected, the difference in that respect being confined to the English districts. In Scotland the proportion of the same class rejected is much lower than in the preceding year, but it must not be forgotten that the numbers are very limited.

The proportion of recruits furnished by each group of occupations was as follows:—

Occupations of Recruits.	Of every 1,000 Recruits examined in—			
	England.	Scotland.	Ireland.	United Kingdom
1. Labourers, Husbandmen, and Servants ..	495	322	642	490
2. Manufacturing Artisans (as Clothworkers, Weavers, Lace Makers, &c.)	161	172	180	166
3. Mechanics employed in Occupations favourable to Physical Development (as Carpenters, Smiths, Masons, &c.)	187	426	53	206
4. Shopmen and Clerks	106	76	37	89
5. Professional Occupations, Students ..	7	2	11	6
6. Boys..	44	2	77	43

This Table shows an increase in the proportion of labourers, &c., and of manufacturing artizans, enlisted in Ireland, and a great decrease in the mechanics and shopmen; while in Scotland there has been an increase in the mechanics, and a slight decrease in the first two classes. In England there has been a decrease in the number of mechanics, and in England and Ireland an increase in the proportion of boys.

2. Regiments and Depôts.

In a former Report (1860) it was stated that besides the recruits raised by parties spread over the country, and specially employed on that service, men are frequently enlisted at the head-quarters of regiments or depôt battalions. These are examined at once by the Medical Officer of the corps, and his opinion as to their physical fitness is final. Medical Officers are also frequently called upon to examine recruits for parties stationed at a distance from the head-quarters of districts; in such cases their decision is not final, but the men are subsequently examined by the Medical Officer in charge of the recruiting district, and appear in his return as secondary inspections.

All recruits who have not been enlisted at the head-quarters of a regiment or depôt battalion, are examined on joining their corps by the Medical Officer, and if deemed unfit by him, are brought before a Medical Board, by whom the question of their fitness is decided.

The recruit returns from regiments and depôt battalions, therefore, include primary inspections—the greater number of which are those of men enlisted for the corps from which the return is made—and secondary inspections, in a very large majority of which the recruits have already been passed by the Medical Officer of a District. A very small proportion, amounting, exclusive of the Foot Guards, to little over one per cent., has been previously examined by civilians, and consists probably of men enlisted by special authority as musicians, &c.

The returns for the year 1862 show that 9,355 recruits were examined at regiments and depôt battalions. Of these, 4,154 were primary inspections, 4,713 had been previously inspected by Army Medical Officers, and 488 by private medical practitioners. The following Table shows the numbers inspected and rejected in each branch of the service:—

United Kingdom.

	Primary Inspections.			Secondary Inspections.						Total Inspected.	Total Rejected.	Ratio per 1,000.
				Previously Examined by Army Surgeons.			Previously Examined by Civilians.					
	Inspected.	Rejected.	Ratio per 1,000.	Inspected.	Rejected.	Ratio per 1,000.	Inspected.	Rejected.	Ratio per 1,000.			
Household Cavalry	197	87	437	2	..	..	..	..	..	199	87	437
Dragoon Guards and Dragoons	675	281	416	692	12	17	6	2	333	1,373	295	215
Royal Artillery	1,082	474	438	1,055	20	19	20	3	150	2,157	497	230
Royal Engineers	63	15	238	201	3	15	..	..	..	264	18	68
Military Train	72	22	306	19	1	53	..	..	..	91	23	253
Foot Guards	150	78	520	232	58	250	397	93	234	779	229	294
Infantry Regiments	656	218	332	16	2	125	1	..	..	673	220	327
Cavalry Depôts	23	2	86	61	2	33	..	..	..	84	4	48
Depôt Battalions	1,236	420	340	2,435	50	21	64	13	203	3,735	483	129
Total	4,154	1,597	384	4,713	148	31	488	111	227	9,355	1,856	198

United Kingdom. It will be observed that the highest ratio of rejections in the primary inspections has been in the Foot Guards.

On comparing the results of the primary inspections in this Table with those for the different arms of the service, at the head-quarters of the recruiting districts (page 30), it will be seen that the ratio of rejections is lower at the regiments in all except the Foot Guards.

The low ratio of rejections at the secondary examinations after Army Surgeons, is very satisfactory, as showing the care with which that duty has been performed by the Medical Officers in charge of recruiting districts, by whom all or nearly all these men must have been primarily examined.

The native countries of the recruits are shown in the following Table :—

Native Countries of Recruits.	Inspected.	Rejected.	Ratio per 1,000 Rejected.
England	5,235	1,071	205
Wales	112	23	205
Scotland	1,154	156	135
Ireland	2,759	595	215
British Colonies and Foreign Countries ..	95	11	116
Total	9,355	1,856	198

The principal difference between these ratios and the district returns, is to be found in the diminished proportion of rejections among the natives of Scotland. The proportion of Welsh recruits rejected is higher, and of Colonial, lower than in the districts, but the numbers are too small to justify the expectation of regularity in the results.

The relative proportion of recruits from each country was—

From England and Wales	572
Scotland	123
Ireland	295
Colonies and foreign Countries	10

This gives a higher proportion from England than is shown in the district returns.

The causes of rejection of the recruits found unfit for service are shown in the following Table :—

United Kingdom.

Class.		Primary Inspections.		Secondary Inspections.			
				Previously Examined by Army Medical Officer.		Previously Examined by Private Medical Practitioner.	
	Number Inspected	4,145		4,713		488	
	Causes of Rejection, in Classes.	Number Rejected.	Ratio per 1,000.	Number Rejected.	Rejected per 1,000.	Number Rejected.	Rejected per 1,000.
1	Syphilis	60	14·44	5	1·06	6	12·30
2	Other Zymotic Diseases	9	2·17	..	..	1	2·05
3	Scrofula	55	13·24	6	1·27	4	8·20
4	Phthisis	29	6·98	1	·21	3	6·15
5	Other Constitutional Diseases	24	5·78	3	·64	2	4·10
6	Diseases of Brain, Spinal Chord, and Nerves	2	·48	..	..	..	..
7	Diseases of Eyes and Eyelids	94	22·63	15	3·18	4	8·20
8	Diseases of Nose and Mouth	6	1·44	..	..	..	..
9	Disease of Ears	12	2·89	..	..	..	..
10	Deafness	12	2·89	1	·21	..	..
11	Impediment of Speech	3	·72	1	·21	..	..
12	Disease of Heart..	87	20·94	14	2·97	9	18·44
13	Disease of Arteries (Aneurism)	1	·24	..	..	..	..
14	Disease of Veins (Varix)	168	40·44	14	2·97	3	6·15
15	Disease of Lungs (except Phthisis)	28	6·74	3	·64	1	2·05
16	Small or Malformed Chest, and Curvature of Spine	246	59·22	14	2·97	32	65·57
17	Loss or Decay of many Teeth	23	5·54	4	·85	..	..
18	Hernia	33	7·94	1	·21	4	8·20
19	Laxity of Abdominal Rings, showing tendency to Hernia	57	13·72	9	1·91	1	2·05
20	Hæmorrhoids	4	·96	..	..	..	..
21	Diseases of Urinary Organs	1	·24	..	..	..	..

United Kingdom.

Class.	Causes of Rejection, in Classes.	Primary Inspections.		Secondary Inspections.			
				Previously Examined by Army Medical Officer.		Previously Examined by Private Medical Practitioner.	
		Number Rejected.	Ratio per 1,000.	Number Rejected.	Rejected per 1,000.	Number Rejected.	Rejected per 1,000.
22	Varicocele	92	22·15	6	1·27	1	2·05
23	Hydrocele	15	3·61	1	·21	..	..
24	Other Diseases of the Genital Organs (not Venereal)	..	..	2	·43	..	..
25	Muscular Tenuity	127	30·57	1	·21	3	6·15
26	Debility	38	9·15	3	·64	1	2·05
27	Defects of Upper Extremities, from Fracture, Contraction, Luxation, &c.	29	6·98	5	1·06	4	8·20
28	Defects of Lower Extremities, from Fracture, Contraction, Luxation, &c.	122	29·37	10	2·12	16	32·79
29	Diseases of Joints	14	3·37	..	..	..	..
30	Other Affections of Bones and Muscles	18	4·33	..	..	..	..
31	Ulcers, Wounds, and Cicatrices	63	15·17	4	·85	3	6·15
32	Other Affections of the Cutaneous System	4	·96	3	·64	..	..
33	Weakness of Intellect	5	1·20	..	..	..	..
34	Malformation of Ears	..	..	..	..	..	..
35	" Nose and Mouth	1	·24	..	..	..	..
36	" Chest and Spine	21	5·06	9	1·91	..	..
37	" Urinary and Genital Organs	..	..	..	..	..	..
38	Marks of Punishment or of letters D and B C	11	2·65	2	·43	2	4·10
39	Unsound Health	83	19·98	10	2·12	11	22·54
40	Excessive Fatness	..	..	1	·21	..	..
	Total	1,597	384·44	148	31·40	111	227·46

United Kingdom.

On comparing this with the corresponding Table for the recruiting districts, a considerable reduction in the proportion of rejections for some of the classes of disabilities will be found. This has been most marked, as regards the primary examinations, in diseases of the eyes and eyelids, loss or decay of many teeth, varicocele, muscular tenuity, defects of lower extremities from fracture, contraction, luxation, &c., malformation of chest and spine, most of which are disabilities involving a question of degree.

The numbers rejected on secondary inspection are too few to justify any minute comparison.

The ages of the recruits inspected were as follows :—

	Boys under 17.	17 to 18.	18 to 19.	19 to 20.	20 to 21.	21 to 22.	22 to 23.	23 to 24.	24 to 25.	25 and Upwards.
Number Inspected* ..	550	805	2,525	1,608	1,059	790	594	516	306	360
Proportion in 10,000 ..	603	883	2,771	1,765	1,162	867	652	566	336	395

On comparing this with the corresponding return for the district recruits, it will be observed that the proportion enlisted under 20 years of age is higher at the regiments, and above 20, at the recruiting districts.

The number of recruits inspected is shown in the following Table, according to their height :—

Ft. In. Ft. In.	Number Inspected.*	Proportion in 10,000.
Under 5 3	514	564
5 3 to 5 4	555	609
5 4 „ 5 5	675	741
5 5 „ 5 6	719	789
5 6 „ 5 7	2,409	2,643
5 7 „ 5 8	1,769	1,941
5 8 „ 5 9	1,136	1,247
5 9 „ 5 10	653	717
5 10 „ 5 11	305	335
5 11 „ 6 0	178	195
6 0 and upwards ..	200	219

This shows, as might have been anticipated, a larger proportion than the district returns of those under 5 feet 5 inches, for whose enlistment a special authority from the Adjutant-General was requisite ; but it also shows a larger proportion of men of 5 feet 11 inches and upwards.

The state of education of the recruits enlisted at the regiments and depôts was as follows :—

	Unable to Read or Write.	Able to Read only.	Able to Read and Write.
Number Inspected	1,745	1,352	6,258
Proportion in 1,000	187	144	669

This Table shows a smaller proportion wholly uneducated, but a larger proportion able to read only than the district returns.

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* A difference of 242 between the totals of these two Tables and the numbers inspected as shown in the other Tables arises from the information as to age and height in the Returns of the 1st Batt. 11th, 2nd Batt. 19th, the 53rd and 58th Regiments, and the 6th and 16th Depôt Battalions not being available.

United Kingdom.

TABLE showing the Occupations of the Recruits Inspected and the Numbers Rejected of each Class.

Occupations of Recruits.	Primary Inspections.			Secondary Inspections.			Total.		
	Number Inspected.	Number Rejected.	Ratio per 1,000 Rejected.	Number Inspected.	Number Rejected.	Ratio per 1,000 Rejected.	Number Inspected.	Number Rejected.	Ratio per 1,000 Rejected.
1. Labourers, Husbandmen, and Servants..	2,141	886	414	2,801	139	50	4,942	1,025	207
2. Manufacturing Artisans, as Clothworkers, Weavers, Lacemakers, &c...	393	169	430	528	50	95	921	219	238
3. Mechanics employed in Occupations favourable to physical development, as Smiths, Masons, &c... ..	824	329	399	1,320	43	33	2,144	372	174
4. Shopmen and Clerks	367	162	441	333	17	51	700	179	256
5. Professional Occupations, Students, &c...	68	20	294	53	3	57	121	23	190
6. Boys	361	31	86	166	7	42	527	38	72
Total	4,154	1,597	384	5,201	259	50	9,355	1,856	198

United Kingdom.

The proportion of rejections in each class of occupations at the primary inspection corresponds very closely with that of the English recruiting districts, except in the fifth and sixth classes, in which they have been considerably less at the regiments. This, as regards the sixth class, probably depends on the circumstance that at the head-quarters of a regiment care is generally taken to ascertain the fitness of a boy before special application is made for authority to enlist him.

The relative proportion of recruits furnished by each class of occupations has been as follows :—

Occupation of Recruits.	Ratio per 1,000 of Recruits Examined.
1. Labourers, Husbandmen, and Servants	528
2. Manufacturing Artisans, as Clothworkers, Weavers, Lacemakers, &c.	99
3. Mechanics employed in Ocupations favourable to physical development, as Smiths, Masons, &c.	229
4. Shopmen and Clerks	75
5. Professional Occupations, Students, &c...	13
6. Boys	56

The first, third, and fifth classes have furnished a higher, and the other three classes a lower proportion of recruits than in the districts.

II.—ON THE HEALTH OF THE TROOPS SERVING IN THE MEDITERRANEAN.

Section I.—Sickness and Mortality.

I.—Gibraltar.

Gibraltar.

In the beginning of June the 1st Battalion 25th Regiment embarked for Malta, to relieve the 2nd Battalion 3rd Regiment, which arrived at Gibraltar on the 19th, and on the 23rd the 2nd Battalion 6th Regiment proceeded to Corfu, to replace the 2nd Battalion 2nd Regiment, which landed at Gibraltar on the 9th of July. With these exceptions, the garrison remained the same as in 1861.

The average strength of the troops serving at Gibraltar during the year was 5,494 non-commissioned officers and men, among whom 4,826 admissions into hospital, and 36 deaths occurred, seven of the latter out of hospital. Five deaths occurred among the invalids on their passage home, or at the invalid depôts, which increase the total to 41. The proportion of admissions, therefore, was 878, and of deaths 7·46 per 1,000 of mean strength, both being lower than the ratios of the preceding year.

The sickness and mortality in each corps is shown in the following Table; the necessary correction has been made in the strength of those regiments which were at Gibraltar during a portion of the year only, to show the average *annual* strength:—

Corps.	Average Annual Strength.	Admissions into Hospital.	Died.				Ratio per 1,000 of Strength.	
			In Hospital.	Out of Hospital.	Of Invalids.	Total.	Admitted.	Died.
Royal Artillery..	964	886	12	..	2	14	919	14·52
Royal Engineers	326	292	3	..	1	4	896	12·27
2nd Battalion 2nd Regiment..	398	577	..	..	..	..	1,450	..
" " 3rd " ..	448	260	1	..	..	1	580	2·22
" " 6th " ..	422	425	1	2	..	3	1,007	7·11
" " 7th " ..	854	728	6	2	..	8	852	9·37
" " 8th " ..	866	789	2	2	1	5	911	5·75
1st " 25th " ..	352	220	..	..	1	1	625	2·84
100th Regiment	835	645	4	..	..	4	772	4·79

The ratio of admissions has been very high in the 2nd Battalion 2nd Regiment, but as it was quartered at Gibraltar during a portion of the year only, the comparison is scarcely fair with the corps stationed there during the whole year. Of the latter, the Royal Artillery furnished the highest, and the 100th Regiment the lowest proportion both of admissions and deaths.

The diseases by which the sickness and mortality were caused are detailed in Abstract No. IX. of Appendix. The following Table gives a summary of these by classes, with the results for the preceding three years:—

Orders.	Diseases.	1862. Average Strength, 5,494.						1859-61.		1862. Infantry at Home.	
		Admitted into Hospital.	Deaths.		Total Died.	Annual ratio per 1,000 of Strength.		Annual ratio per 1,000 of Strength.		Annual ratio per 1,000 of Strength.	
			At Gibraltar.	Of Invalids.		Admitted.	Died.	Admitted.	Died.	Admitted	Died.
	Class I.										
1	Miasmatic Diseases ..	1,563	18	..	18	284·5	3·28	284·4	5·34	149·1	·64
2	Enthetic „ ..	1,011	..	..	..	184·0	..	221·7	..	305·5	·03
3	Dietic „ ..	51	..	..	..	9·3	..	14·5	·24	4·2	·03
4	Parasitic „ ..	54	..	..	..	9·8	..	7·5	..	45·5	..
	Class II.										
1	Diathetic Diseases ..	22	1	..	1	4·0	·18	3·2	..	2·5	·10
2	Tubercular „ ..	38	3	4	7	6·9	1·28	6·6	1·10	16·1	2·38
	Class III. Diseases of the—										
1	Nervous System ..	84	2	..	2	15·3	·36	20·6	·18	15·5	·44
2	Circulatory „ ..	40	3	..	3	7·3	·55	5·6	·67	7·1	·64
3	Respiratory „ ..	294	..	..	..	53·5	..	56·6	·13	71·5	1·12
4	Digestive „ ..	246	1	..	1	44·8	·18	36·0	·24	32·9	·51
5	Urinary „ ..	19	1	..	1	3·5	·18	2·9	·24	1·9	·07
6	Reproductive „ ..	135	..	..	..	24·6	..	13·5	..	8·0	..
7	Locomotive „ ..	32	..	1	1	5·8	·18	4·3	·06	2·7	·03
8	Integumentary „ ..	755	..	..	..	137·4	..	136·4	..	103·8	·03
	Class IV.										
4	Diseases of Nutrition	15	..	..	..	2·7	..	1·0	..	1·3	..
	Class V.										
1	Accidents	433	2	..	2	78·8	·36	76·2	·43	62·1	·44
3	Homicide	..	1	..	1	..	·18	·1	·13	..	..
4	Suicide	4	3	..	3	·7	·55	·1	·43	·1	·20
5	Execution	..	1	..	1	..	·18	..	·13	..	..
6	Corporal Punishment	22	..	..	..	4·0	..	2·8	..	1·9	..
	Diseases not stated ..	..	..	..	..	..	..	4·6	..	..	..
	No appreciable Disease	8	..	..	..	1·5	..	·4	..	·2	..
	Total	4,826	36	5	41	878·4	7·46	899·0	9·32	831·9	6·66

These results show a reduction of 20 per 1,000 in the admissions, and 1·86 in the deaths, upon the average of the three preceding years. They are, however, both still in excess of the proportion among Infantry in the United Kingdom.

Miasmatic Diseases have furnished exactly the average ratio of admissions, but the diseases constituting the class have been somewhat differently distributed, as will be seen from the following Table :—

Gibraltar.

Miasmatic Diseases.	Admitted.	Died.	Annual ratio per 1,000.			
			1862.		1859–61.	
			Admitted.	Died.	Admitted.	Died.
Eruptive Fevers	4	..	·7	..	1·9	·31
Paroxysmal „	84	1	15·3	·18	3·4	·18
Continued „	564	16	102·7	2·92	91·2	2·52
Dysentery, Diarrhœa, and Cholera	284	1	51·7	·18	80·3	2·27
Sorethroat and Influenza	110	..	20·0	..	18·5	..
Ophthalmia..	211	..	38·4	..	41·7	..
Rheumatism	250	..	45·5	..	36·2	..

Paroxysmal Fevers were considerably in excess of the average, but the difference arose from the number of admissions in the 2nd Battalion 2nd Regiment, after its arrival from Corfu, 58 of the cases having occurred in it. It is probable the liability to paroxysmal fevers was contracted during the service of this corps in the Ionian Islands, the admissions by them having been numerous in it at Cephalonia in 1860, and at Corfu in 1861.

Continued Fevers were also in excess of the average, and gave rise to a slightly higher mortality, but both admissions and deaths were rather below the amount of the preceding year. The 2nd Battalion 7th Regiment continued to furnish the highest proportion of cases and deaths, and next to it the Royal Artillery. The proportion of cases from the 2nd Battalion 8th Regiment was also high, but none of them terminated fatally. Mr. Mandeville, the Surgeon of the 7th Regiment, attributes the prevalence of fever to the same causes as last year—imperfect drainage and sewerage, overcrowding of the men in barracks, and exposure to the heat of the sun on the public works. The barracks occupied during the year were the Grand Casemate, and the average cubic space per man in them was 470 feet, while in 1861 the space in the Windmill Hill Barracks, in which they were quartered, was only 322 feet.

Dr. Combe, the Surgeon in charge of the Royal Artillery, considers the prevalence of fever to depend upon overcrowding, defective ventilation, defects in drainage, latrines, and water supply, exposure in the course of duty, intemperance, and the general unsanitary state of the inhabited parts of Gibraltar.

The fever which prevails at Gibraltar is stated by the Medical Officers to be frequently followed by rheumatism, and inflammation of the testicles (*orchitis*).

Dysentery, Diarrhœa, and Cholera have prevailed to nearly the same extent as in 1861. They have been considerably under the average of the three years 1859–61, but that was unduly raised by the epidemic of 1860.

Enthetic Diseases.—There has been a considerable reduction in the admissions by this class. It has taken place entirely in the group of syphilitic diseases, that of gonorrhœal being rather above the proportion in the preceding year.

Dietic Diseases.—There has been a decrease in the admissions under the head of intemperance (*ebriositas*), and this has extended also to the cases of *delirium tremens*. Combining the two diseases, the reduction has amounted to two-fifths of the cases in 1861. The proportion of admissions by this class of diseases, however, still continues double that which occurs among the Infantry serving at home.

The other classes of diseases present so very little difference from the results of previous years, as scarcely to require special remark. The case admitted under the head of Suicidal Poisoning was that of a boy in the band of the 2nd Regiment, who was believed to have taken a grain of strychnine for the purpose of self destruction. He presented all the symptoms of poisoning by that drug, but recovered under the the use of the appropriate remedies.

Gibraltar.

It is not stated in the reports on what evidence the quantity he had taken was determined.

The admissions returned as "No appreciable disease" were chiefly men who were sent to hospital by the commanding officer for observation as to their mental capacity. As it was ascertained that they laboured under no disease, mental or bodily, they have been returned under this heading.

II.—MALTA.

Malta.

In the beginning of June the 1st Battalion 25th Regiment, from Gibraltar, relieved the 2nd Battalion 3rd Regiment. No other change in the corps composing the garrison took place during the year.

The average strength of the troops, exclusive of the Royal Malta Fencible Artillery, was 5,958. The admissions into hospital were 4,140; the deaths amounted to 44 in, and 5 out of hospital, and 6 among invalids on their passage home, or at the Invalid Depôt while awaiting their discharge, making a total of 55. These numbers give the ratio of 695 admissions, and 9·23 deaths per 1,000 of mean strength—both lower than in 1861.

The sickness and mortality in the different corps composing the garrison was as follows:—

Corps.	Average Annual Strength.	Admitted into Hospital.	Died.				Ratio per 1,000 of Strength.	
			In Hospital.	Out of Hospital.	Of Invalids.	Total.	Admitted.	Died.
Royal Artillery	594	402	3	..	..	3	677	5·05
Royal Engineers	200	158	2	1	1	4	790	20·00
2nd Battalion 3rd Foot*	382	184	1	..	1	2	482	5·24
,, ,, 15th ,, ...	844	725	9	..	..	9	859	10·66
1st ,, 22nd ,, ...	853	757	7	..	1	8	887	9·38
2nd ,, ,, ,, ...	847	467	5	..	1	6	551	7·08
,, ,, 23rd ,, ...	869	629	7	3	2	12	724	13·81
1st ,, 25th ,, *	445	444	3	..	..	3	998	6·74
4th ,, Rifle Brigade ..	864	352	5	1	..	6	407	6·94

The other two deaths in hospital, not accounted for in this Table, were of men of the Army Hospital Corps.

In the corps which served during the whole year in Malta, the sickness was greatest in the 1st Battalion 22nd, and, omitting the Royal Engineers, on account of their limited numbers, the mortality was highest in the 2nd Battalion 23rd Regiment. The lowest ratio of admissions was, as in the preceding year, in the Rifle Brigade, and of deaths in the Royal Artillery.

The admissions and deaths by the different classes of diseases, compared with the results of the three preceding years, are shown in the following Table. The diseases for 1862 will be found specified in Abstract No. IX. of Appendix.

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* The necessary correction has been made in the strength of these corps to show the average *annual* strength.

Malta.

Orders.	Diseases.	1862.—Strength, 5,958.						1859–61.	
		Admitted into Hospital.	Deaths.		Total Died.	Annual ratio per 1,000 of Strength.		Annual ratio per 1,000 of Strength.	
			In Malta.	Of Invalids.		Admitted.	Died.	Admitted.	Died.
	Class I.								
1	Miasmatic Diseases..	2,127	26	..	26	357·0	4·36	440·9	6·53
2	Enthetic ,, ..	295	..	..	..	49·5	..	132·1	..
3	Dietic ,, ..	60	2	..	2	10·1	·34	7·2	..
4	Parasitic ,, ..	74	..	..	..	12·4	..	12·9	..
	Class II.								
1	Diathetic Diseases..	36	1	..	1	6·0	·17	2·4	..
2	Tubercular ,, ..	67	5	4	9	11·2	1·51	11·3	2·35
	Class III. Diseases of the—								
1	Nervous System ..	82	2	1	3	13·8	·50	17·1	·57
2	Circulatory ,, ..	20	1	..	1	3·4	·17	5·8	·63
3	Respiratory ,, ..	180	4	..	4	30·2	·67	53·1	·97
4	Digestive ,, ..	151	3	1	4	25·3	·67	49·6	·57
5	Urinary ,, ..	13	1	..	1	2·2	·17	1·7	·22
6	Reproductive ,, ..	83	..	..	..	13·9	..	8·3	..
7	Locomotive ,, ..	24	..	..	..	4·0	..	3·4	..
8	Integumentary ,, ..	529	..	..	..	88·8	..	151·6	..
	Class IV.								
4	Diseases of Nutrition.	13	..	..	..	2·2	..	·5	..
	Class V.								
1	Accidents	368	3	..	3	61·8	·50	73·9	1·26
4	Suicide	2	1	..	1	·3	·17	..	·17
5	Execution	..	..	..	..	..	..	..	·06
6	Corporal Punishment	16	..	..	..	2·7	..	2·8	..
	Diseases not stated ..	..	..	..	..	..	..	3·9	..
	Total	4,140	49	6	55	694·8	9·23	978·5	13·33

This Table shows a marked reduction in the prevalence of miasmatic and enthetic diseases, of diseases of the respiratory, digestive, and integumentary systems, and of accidents and injuries, compared with the average of the three preceding years. Miasmatic diseases and those of the respiratory system, however, scarcely differ from the results of 1861. The ratio of admissions by all causes is lower than that recorded in any year from 1817 to 1846 inclusive, and the only instance of a lower rate of mortality was in 1840, when it amounted to 5·6 per 1,000, exclusive of the deaths of invalids.

MIASMATIC DISEASES, when subdivided into groups, give the following results :—

Malta.

Diseases.	1862.		Annual Ratio per 1,000 of Mean Strength.			
			1862.		1859–61.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Eruptive Fevers..	8	2	1·3	·34	1·7	11
Paroxysmal ,, ...	11	..	1·8	..	4·9	..
Continued ,, ...	844	21	141·7	3·51	203·4	5·22
Dysentery, Diarrhœa, and Cholera ..	297	3	49·8	·50	81·6	1·09
Sorethroat and Influenza	88	..	14·8	..	12·9	..
Ophthalmia	571	..	95·8	..	76·5	..
Rheumatism	287	..	48·2	..	55·6	·11

This shows the decrease in the admissions to have taken place in continued fevers and dysentery diarrhœa and cholera, and in the deaths, in continued fevers. Ophthalmia has been considerably more prevalent than formerly.

Eruptive Fevers.—Small pox prevailed as an epidemic among the civil population during the first half of the year, but only seven cases, of which two, however, proved fatal, occurred among the troops. All the cases bore satisfactory marks of vaccination, and two of them had also marks of previous small pox; one of the latter terminated fatally.

Continued Fevers, though much under the average of the three preceding years, prevailed to exactly the same extent as in 1861. The corps in which the greatest number of cases occurred were the 1st Battalion 22nd Regiment, the 1st Battalion 25th, and the Royal Artillery. As the 25th Regiment, however, was quartered in Malta during the second half of the year only, when fever usually is most prevalent, it can scarcely be brought into fair comparison with the others. The 1st Battalion 22nd occupied the Floriana Barracks throughout the year, and, as in 1861, furnished the largest number of cases of fever in the garrison. Some alterations have been effected in the barracks, which it is hoped may improve their sanitary condition, but they were not completed in sufficient time to have influenced the results in 1862. The Lower St. Elmo Barracks, which were so very unhealthy in 1859, were occupied during the first half of the year by the 3rd Regiment, and the second half by the 2nd Battalion 23rd, and continued to show the beneficial results of the sanitary improvements by furnishing a proportion of fever cases considerably under the average.

Dysentery, Diarrhœa, and Cholera, were more prevalent than in 1861, though much less so than on the average of the three years 1859–61. The regiments in which the greatest number of cases of diarrhœa occurred were the 1st Battalion 25th, the 1st Battalion 22nd, and the Royal Artillery, being those in which fever also was most prevalent. The Rifle Brigade, quartered in Fort Manoel, Lazaretto, and Plague Hospital, were remarkably exempt from this group of diseases.

Ophthalmia was the cause of a large number of admissions, amounting to nearly one-seventh of the whole. Its great prevalence, however, was confined to two regiments, the 2nd Battalions of the 15th and 23rd, in the former of which there were 278, and in the latter 162 cases, both in excess of the amount in 1861. The 2nd Battalion 3rd Regiment, which in that year had suffered considerably from this disease, had only 22 admissions up to the date of its embarkation for Gibraltar in June.

The Principal Medical Officer, in his report, observes that "the primary exciting cause of this complaint is still involved in considerable obscurity, but that imperfect ventilation, combined with deficiency in washing and bathrooms, and neglect of proper supervision over the men when performing their ablutions, are most fruitful sources of the malady, and that, once established, it spreads by contagion, experience has now fully proved."

Malta. In the 15th Regiment, with a view to diminish the overcrowding in barracks, tents were pitched in August, for night use only, for 104 men; and in the end of September all the men affected with sore eyes were sent to the Island of Gozo. At the end of the year it was also decided to send a number of the men of the 23rd Regiment labouring under this disease to the Sanatorium at Citta Vecchia, but the effect of these measures in arresting the disease cannot be fully ascertained till the returns for 1863 are received.

ENTHETIC DISEASES show a very great reduction, the admissions having amounted to less than half the proportion in 1861, and about two-fifths of the average of the three years 1859-61. This is attributed to the adoption, in the middle of 1861, and to the efficient execution, of a system of police surveillance of the prostitutes. The reduction has been almost entirely in the syphilitic group, the gonorrhœal being nearly the same as in 1861.

DIETIC DISEASES.—There has been an increase in the admissions under the head of intemperance. Of the two deaths from this cause, one was that of a Serjeant-Major of the Army Hospital Corps, and the other of a Private of the 23rd Regiment, who "was found dead in his bed, after having drunk excessively of alcohol the night previously."

TUBERCULAR DISEASES.—The admissions by this class amounted to exactly the average, but the deaths were 0·84 per 1,000 under it. This reduction does not appear to have been caused by invaliding, as the numbers sent home were exactly the same as in 1861, but it may probably be an accidental variation, arising from the limited numbers.

ACCIDENTS AND VIOLENCE.—Three of the deaths included under this head were accidental, and one suicidal. Of the accidental, one was by drowning, one by concussion of the brain, the result of a fall from a parapet while on duty, and the third by fracture of the skull, caused by falling a height of about 25 feet, while in a state of intoxication. The suicide was that of a soldier employed as a mess waiter, who shot himself with his rifle.

The other classes of diseases do not appear to require special notice.

ROYAL MALTA FENCIBLE ARTILLERY.

In an average strength of 607 non-commissioned officers and men, 502 admissions, and 4 deaths, occurred, being in the annual ratio of 827, and 6·60 per 1,000. The former is higher than, and the latter nearly identical with the average of the three preceding years. None of the deaths occurred out of hospital.

The admissions into hospital, and deaths by the different classes of diseases, are shown in the following Table. The details for 1862 will be found in Abstract No. IX. of Appendix.

Malta.

		Royal Malta Fencible Artillery.						Annual Ratio per 1,000 of Strength.	
	Average Strength.	607		Annual Ratio per 1,000 of Strength.		1859–61. Ratio per 1,000.		Line Regiments at Malta. 1862.	
Orders.	Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
	Class I.								
1	Miasmatic Diseases	149	..	245·5	..	201·3	1·65	357·0	4·36
2	Enthetic „	43	..	70·8	..	66·9	..	49·5	..
3	Dietic „	..	..	..	..	..	..	10·1	·34
4	Parasitic „	1	..	1·6	..	4·4	..	12·4	..
	Class II.								
1	Diathetic Diseases	..	..	..	..	2·2	..	6·0	·17
2	Tubercular „	6	1	9·9	1·65	2·2	1·10	11·2	1·51
	Class III. Diseases of the—								
1	Nervous System	12	1	19·8	1·65	9·9	..	13·8	·50
2	Circulatory „	3	1	4·9	1·65	1·1	..	3·4	·17
3	Respiratory „	35	..	57·7	..	72·4	·55	30·2	·67
4	Digestive „	96	1	158·2	1·65	135·5	·55	25·3	·67
5	Urinary „	1	..	1·6	..	2·2	..	2·2	·17
6	Reproductive „	2	..	3·3	..	1.6	..	13·9	..
7	Locomotive „	..	..	..	..	..	..	4·0	..
8	Integumentary „	87	..	143·3	..	140·4	..	88·8	..
	Class IV.								
4	Diseases of Nutrition ..	..	..	..	..	..	..	2·2	..
	Class V.								
1	Accidents	66	..	108·8	..	90·5	1·65	61·8	·50
3	Homicide	..	..	..	..	..	·55	..	..
4	Suicide	..	..	..	..	..	..	·3	·17
6	Corporal Punishment ..	1	..	1·6	..	..	..	2·7	..
	Diseases not stated	..	..	..	..	..	..	..	..
	Total	502	4	827·	6·60	730·6	6·05	694·8	9·23

Miasmatic diseases were more than usually prevalent. Fourteen cases of measles of a mild type were admitted into hospital, the disease being at the time epidemic among the civil population. Ophthalmia furnished 35 cases, and rheumatism 48. Venereal has given rise to a higher proportion of admissions than among the Line regiments, while formerly the reverse was the case in a very marked degree. The admissions by tubercular diseases were greatly in excess of the average, and the proportion approximated nearly to that of the Line regiments, but the numbers under observation were too few to justify deductions, unless from the results of a series of years.

III.—Ionian Islands.

Ionian Islands.

On the 30th of June the 2nd Battalion 6th Regiment, from Gibraltar, relieved the 2nd Battalion 2nd Regiment. With this exception, there was no change during the year in the corps stationed in the Ionian Islands.

The average strength of non-commissioned officers and men was 3,985;

Ionian Islands. the admissions into hospital amounted to 3,066, the deaths to 20 in, and 2 out of hospital, and one invalid died at sea, on the passage home. These numbers give the proportion of 769 admissions, and 5·77 deaths per 1,000 of mean strength, both considerably under the average of previous years.

The relative sickness and mortality in the different corps are shown in the following Table:—

Regiments.	Average Annual Strength.	Admitted into Hospital.	Died.				Ratio per 1,000.	
			In Hospital.	Out of Hospital.	Of Invalids.	Total.	Admitted.	Died.
Royal Artillery	381	251	2	1	..	3	659	7·87
Royal Engineers	183	190	1	..	..	1	1,038	5·46
2nd Battalion, 2nd Regiment* ..	424	291	2	..	..	2	686	4·72
„ 4th „ ..	849	762	7	..	..	7	897	8·24
„ 6th „ * ..	426	557	4	..	..	4	1,307	9·39
1st „ 9th „ ..	858	550	1	..	..	1	641	1·16
2nd „ „ „ ..	864	433	3	1	1	5	501	5·79

The highest ratio, both of sickness and mortality, was in the 2nd Battalion 6th Regiment, but as this corps was stationed in the Command during the latter, and usually the most unhealthy, half of the year, the comparison with the other corps is not strictly correct. Of those which served during the whole year in the Ionian Islands, the Royal Engineers furnished the highest proportion of admissions, and the 2nd Battalion 4th Regiment, of deaths.

The following Table, compiled from Abstract No. IX. of Appendix, and previous Reports, shows the influence of the different classes of diseases in causing sickness and mortality in this Command:—

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* Strength corrected to show the mean *annual* strength.

Ionian Islands.

Orders.	Diseases.	1862.—Strength, 3,985.						1859–61.	
		Admitted into Hospital.	Deaths.			Annual Ratio per 1,000 of Strength.		Annual Ratio per 1,000 of Strength.	
			In Ionian Islands.	Of Invalids.	Total.	Admitted.	Died.	Admitted.	Died.
	Class I.								
1	Miasmatic Diseases ..	1,295	13	..	13	325·0	3·26	328·6	5·16
2	Enthetic „	425	..	..	..	106·6	..	124·2	·09
3	Dietic „	21	..	..	..	5·3	..	4·6	·17
4	Parasitic „	16	..	..	..	4·0	..	4·7	..
	Class II.								
1	Diathetic Diseases ..	7	2	..	2	1·8	·50	1·1	·09
2	Tubercular „	34	3	1	4	8·5	1·01	11·0	1·35
	Class III. Diseases of the—								
1	Nervous System ..	70	..	..	..	17·6	..	17·1	·84
2	Circulatory „	15	1	..	1	3·8	·25	5·2	·50
3	Respiratory „	135	2	..	2	33·9	·50	49·9	·59
4	Digestive „	165	..	..	..	41·4	..	42·7	·42
5	Urinary „	5	..	..	..	1·2	..	2·1	..
6	Reproductive „	35	..	..	..	8·8	..	1·5	..
7	Locomotive „	10	..	..	..	2·5	..	3·5	·09
8	Integumentary „	504	..	..	..	126·5	..	141·4	..
	Class IV.								
4	Diseases of Nutrition ..	14	..	..	..	3·5	..	4·1	..
	Class V.								
1	Accidents	307	1	..	1	77·0	·25	72·7	·59
3	Homicide	..	..	..	..	..	..	·1	·09
4	Suicide	1	..	..	..	·2	..	..	·17
5	Execution	..	..	..	..	..	..	..	·09
6	Corporal Punishment ..	7	..	..	..	1·8	..	2·0	..
	Diseases not specified ..	..	..	..	..	..	..	2·3	..
	Total	3,066	22	1	23	769·4	5·77	818·8	10·24

This Table shows a reduction both in the sickness and mortality, as compared with the average of the three preceding years; the former chiefly in venereal, and diseases of the respiratory and integumentary system, and the latter in miasmatic diseases.

Miasmatic Diseases have prevailed to the same extent as before, but there has been a reduction in the mortality to the extent of nearly 2 per 1,000 of the strength. The following results are obtained on subdividing the class into groups:—

Ionian Islands.

Diseases.	Admitted.	Died.	Annual Ratio per 1,000 of Strength.			
			1862.		1859-61.	
			Admitted.	Died.	Admitted.	Died.
Eruptive Fevers	2	..	·5	..	8·2	·17
Paroxysmal ,, ...	62	1	15·6	·25	32·0	·42
Continued ,, ...	631	10	158·3	2·51	149·0	4·40
Dysentery, Diarrhœa, and Cholera ..	101	..	25·3	..	46·0	·17
Sorethroat and Influenza	124	..	31·1	..	22·2	..
Ophthalmia..	209	..	52·5	..	38·0	..
Rheumatism	113	2	28·4	·50	26·7	..

This Table shows that while the general prevalence of miasmatic diseases has been nearly the same as before, there has been a decrease in eruptive and paroxysmal fevers, and in dysentery, &c., and an increase in continued fevers, sorethroat and influenza, and ophthalmia. The reduction in the mortality has been chiefly in that by continued fevers.

Continued Fevers, though slightly in excess of the average of the preceding three years, have been considerably under the amount which occurred in 1861. In Corfu, Fort Neuf, as formerly, furnished the largest proportion of admissions, and next to it the Citadel. There was also a considerable amount of fever among the troops in Cephalonia, though much less than in the preceding year.

The following Table shows the relative prevalence of fevers (paroxysmal and continued) in the different barracks occupied by the troops in Corfu :—

Corps.	Barracks occupied.	Average Strength.	Cases of Fever.		Ratio per 1,000.	
			Admitted.	Died.	Admitted.	Died.
Royal Artillery	Old Venetian Barracks, Citadel	347	27	..	78	..
Royal Engineers	Bombproof Barracks, Citadel	182	40	1	220	5·49
2nd Battalion 2nd Regiment ,, ,, 6th ,,	Fort Neuf Barracks ..	729	189	3	259	4·12
1st ,, 9th ,,	Boombproof & Old Venetian Barracks, Citadel	803	84	..	105	..
2nd ,, ,, ,,		860	72	2	84	2·33

From this Table it appears that the Fort Neuf and Bomb Proof Barracks have furnished more than double the proportion of any of the others, the causes being the same as pointed out in previous reports.

In Cephalonia the admissions by fever amounted to 366 per 1,000 of the strength. This was lower than in 1861, but considerably above the average of the other islands. During the year 1862 a new barrack was built on an elevated site near the town, which it is hoped will be found more healthy than the hired houses previously occupied.

Ophthalmia was in excess of the average. The 2nd Battalion 4th Regiment, in Cephalonia, and the 1st Battalion 9th, in Corfu, furnished the highest proportion of cases, but no special reason has been assigned in the reports for its prevalence in these corps.

Enthetic Diseases show a considerable reduction upon the previous average, but although contrasting favourably with their prevalence among the troops at Gibraltar and at home, the results show a proportion more than double that of the regiments of the Line at Malta.

Ionian Islands.

ACCIDENTS, VIOLENCE, &c.—The case of poisoning was that of a man who unintentionally drank some oxalic acid in solution. He was promptly treated, and recovered without any serious consequences.

The other classes of diseases do not seem to require any special remarks.

The admissions into hospital, and deaths in the different islands, were as follows :—

	Average Strength.	Admissions into Hospital.	Total Deaths	Annual Ratio per 1,000.	
				Admitted.	Died.
Corfu and Vido	2,939	2,104	14	716	4·76
Paxo	33	28	..	848	..
Santa Maura	134	103	1	769	7·46
Cephalonia	485	472	4	973	8·25
Zante	298	259	2	869	6·71
Ithaca	64	77	1	1,203	15·62
Cerigo	31	11	..	355	..

Compared with 1861, these ratios show a reduction in the sickness in all the islands, except Santa Maura and Ithaca, in the former of which it had previously been very low, and in the latter the force was so small as to render considerable fluctuations almost inevitable.

The following Table shows the influence of the different classes of diseases in each of the three principal stations of the troops :—

Ionian Islands.

Order.	Stations	Corfu.				Cephalonia.				Zante.			
	Strength	2,938.				484.				298.			
				Annual Ratio per 1,000.				Annual Ratio per 1,000.				Annual Ratio per 1,000.	
	Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
	Class I.												
1	Miasmatic Diseases ..	821	6	279 ·4	2 ·04	278	3	574 ·4	6 ·20	106	2	355 ·7	6 ·70
2	Enthetic ,, ..	309	..	105 ·2	..	44	..	90 ·9	..	55	..	184 ·6	..
3	Dietic.. ,, ..	13	1	4 ·4	·34	4	..	8 ·3	..	1	..	3 ·3	..
4	Parasitic ,, ..	16	..	5 ·5	..	1	..	2 ·1	..	1	..	3 ·3	..
	Class II.												
1	Diathetic Diseases ..	5	2	1 ·7	·68	..	..	..	..	..	..	..	..
2	Tubercular ,, ..	16	1	5 ·5	·34	11	1	22 ·7	2 ·07	1	..	3 ·3	..
	Class III. Diseases of the—												
1	Nervous System ..	57	..	19 ·4	..	10	..	20 ·7	..	5	..	16 ·8	..
2	Circulatory ,, ..	9	1	3 ·1	·34	..	..	..	..	5	..	16 ·8	..
3	Respiratory ,, ..	110	2	37 ·4	·68	12	..	24 ·8	..	4	..	13 ·4	..
4	Digestive ,, ..	104	..	35 ·4	..	20	..	41 ·3	..	21	..	70 ·5	..
5	Urinary ,, ..	2	..	·7	..	..	..	..	..	3	..	10 ·1	..
6	Reproductive ,, ..	29	..	9 ·9	..	2	..	4 ·1	..	1	..	3 ·3	..
7	Locomotive ,, ..	6	..	2 ·0	..	1	..	2 ·1	..	5	..	16 ·8	..
8	Integumentary ,, ..	365	..	124 ·2	..	53	..	109 ·5	..	33	..	110 ·7	..
	Class IV.												
4	Diseases of Nutrition .	8	..	2 ·7	..	3	..	6 ·2	..	..	..	..	..
	Class V.												
1	Accidents	226	1	76 ·9	·34	32	..	66 ·1	..	16	..	53 ·7	..
3	Homicide	..	..	..	..	..	..	..	..	..	..	..	..
4	Suicide	..	..	..	..	..	..	..	..	..	..	..	..
6	Corporal Punishment.	7	..	2 ·4	..	1	..	2 ·1	..	1	..	3 ·3	..
	Diseases not specified.	..	..	..	..	..	..	..	..	1	..	3 ·3	..
	Total	2,103	14	715 ·8	4 ·76	472	4	975 ·3	8 ·27	259	2	868 ·9	6 ·70

This Table shows a marked reduction in the prevalence of miasmatic diseases in Corfu and Cephalonia, compared with the results of the preceding year, but an increase in Zante. In Cephalonia and Zante diseases of the integumentary system, and accidents, have been much below the previous amount, and in Zante venereal has undergone a great reduction. In Zante diseases of the respiratory system have been much under the average, but there has been an increase to a similar extent in those of the digestive system. The exemption from diseases of the respiratory system, in Cephalonia, has not been so great as in the preceding year.

Section II.

On the Extent of Invaliding among the Troops serving in the Mediterranean.

Mediterranean.

The numbers sent home during the year for discharge from the service as invalids were 44 from Gibraltar, 47 from Malta, and 42 from the Ionian Islands; and for change of climate, 115 from Gibraltar, 39 from Malta, and 26 from the Ionian Islands, making a total of 133 for discharge, and 180 for change of climate. Calculated on the total strength of the three Commands, these numbers give the ratios of 8·62 and 11·66 per 1,000 respectively; in 1861 they were 11·54 and 13·19 per 1,000.

The diseases for which these men were sent home are stated in Abstract No. X. of Appendix, of which the following is a summary:—

	Gibraltar.		Malta.		Ionian Islands.	
	For Discharge.	For change of Climate.	For Discharge.	For change of Climate.	For Discharge.	For change of Climate.
Paroxysmal Fevers	..	1	..	..	..	..
Continued ,, ...	..	23	..	2	..	..
Dysentery and Diarrhœa	..	5	..	1	1	..
Ophthalmia	1	7	7	15	5	2
Rheumatism	2	13	..	2	1	3
Venereal Diseases	4	7	..	1	1	4
Dietic ,, ...	1	..	..	1	..	..
Diathetic ,, ...	1	..	..	..	..	..
Tubercular ,, ...	7	7	16	6	11	3
Diseases of the—						
Nervous System..	13	9	11	4	7	1
Circulatory ,, ...	6	5	4	..	2	3
Respiratory ,, ...	4	13	2	3	1	7
Digestive ,, ...	2	10	2	3	6	..
Urinary ,, ...	..	1	..	..	1	..
Reproductive ,, ...	..	..	..	..	..	1
Locomotive ,, ...	1	3	2	..	1	..
Integumentary ,, ...	..	7	1	1	2	..
Diseases of Nutrition	2	4	..	..	1	1
Accidents, &c.	..	..	2	..	1	1
Worn out	..	..	..	..	1	..
Total	44	115	47	39	42	26
Ratio per 1,000 of Mean Strength 1862	8·0	20·9	7·9	6·5	10·5	6·5
Ratio per 1,000 of Mean Strength 1861	9·2	22·8	9·2	8·7	18·2	6·9

The results do not differ greatly from those of the preceding year, except in the number sent home for discharge from the Ionian Islands. They still show a relatively high proportion from Gibraltar for change of climate after fever, and from Malta on account of ophthalmia.

The number sent home labouring under tubercular diseases has been lower than in 1861 from Gibraltar and the Ionian Islands, and exactly the same as in that year from Malta.

The number finally discharged the service of invalids from the Mediterranean Commands, and the causes of disability, are shown in the following Table:—

Mediterranean.

Invalids from	Gibraltar.	Malta.	Ionian Islands.	Total Mediterranean Commands.
Rheumatism and Chronic Pains	10	2	4	16
Venereal	2	1	2	5
Weakly Constitution and Debility	4	1	1	6
Cachexy and Scrofula	10	2	5	17
Pulmonary Disease	25	24	7	56
Mental Disease	16	6	..	22
Paralysis	2	2	..	4
Epilepsy	9	7	4	20
Deafness	1	2	1	4
Diseases of the Eye	16	21	..	37
Cardiac and Aortic Disease	22	9	4	35
Dysentery and Hepatic Disease	4	2	1	7
Dropsy and Visceral	4	..	..	4
Hernia	2	..	..	2
Stricture and Urinary Diseases	3	1	1	5
Contractions	2	1	4	7
Ulcers and Varices	8	2	2	12
Dislocations, Fractures, and Amputations	2	3	1	6
Worn-out	7	..	..	7
Total	149	86	37	272
Ratio per 1,000 of Mean Strength 1862	27·1	14·4	9·3	17·6
Ratio per 1,000 of Mean Strength 1859–61	14·4	7·9	10·1	10·8

The proportion finally discharged the service in 1862 was considerably above the average from Gibraltar, the principal causes being cardiac, pulmonary, and mental diseases, and those of the eye. Pulmonary and ocular diseases were the chief causes from Malta, while from the Ionian Islands there was no marked predominance of any particular disability.

SECTION III.

Mean Daily Sick.

The following Table gives the usual information on this head, for the year 1862, compared with the average of the three preceding years :—

	Gibraltar.	Malta, exclusive of Royal Malta Fencibles.	Ionian Islands.	United Kingdom. Infantry Regiments. Average of three years, 1860–62.
Average Strength in 1862	5,494	5,958	3,985	
Average constantly sick in 1862..	242	234	131	
Ratio per 1,000 constantly sick 1862 ..	44·05	39·27	32·87	46·58
Ratio per 1,000 constantly sick 1859–61..	44·96	49·18	40·69	
	days	days	days	days
Average sick time to each Soldier 1862 ..	16·08	14·34	12·00	17·00
Average sick time to each Soldier 1859–61..	16·41	17·95	14·85	
Average duration of the cases of disease 1862 ..	18·30	20·63	15·60	19·77
Average duration of the cases of disease 1859–61..	18·25	18·35	18·13	

The results for Gibraltar correspond very closely with the average of the three preceding years. In Malta there has been a very marked reduction in the proportion constantly sick, and in the average sick time to each soldier; but the average duration of the cases in hospital has been rather more than two days longer than formerly, so that the reduction in the mean sick would seem to have taken place in those cases which require treatment for a few days only. In the Ionian Islands, also, there has been a considerable diminution in the mean daily sick, and average sick time to each soldier, but it has extended also to the duration of the cases, leading to the inference that the improvement has not been confined to the trivial and unimportant cases, but has included those which require longer treatment and keep up the number of cases in the wards of the hospital. *Mediterranean.*

Section IV.

On the Influence of Age on the Mortality.

In Abstract No. XI. of Appendix will be found a statement of the numbers serving in each corps in the Mediterranean in 1862, arranged according to ages, and the deaths which occurred in each quinquennial period of life. From this and previous reports the following Table has been prepared :—

		Ratio of Deaths per 1,000 of Strength at each Period of Life.					
		Under 20.	20-24.	25-29.	30-34.	35-39.	40 and upwards.
Mediterranean Commands	1862	4·52	5·87	8·23	13·18	13·66	12·82
	1859-61	7·26	8·95	15·00	12·92	11·78	29·59

From this it will be seen that the mortality at the ages under 30 has been below the average of the preceding three years; indeed, it has been lower than that of the male population at the same ages in England.

III.—ON THE HEALTH OF THE TROOPS SERVING IN BRITISH AMERICA.

Section I.

Sickness and Mortality.

I. Bermuda.

Bermuda.

In the month of January, 1862, two Batteries of the 15th Brigade, R.A., and the 5th Company of Royal Engineers arrived from, and in June the 2nd Battery 7th Brigade, R.A., embarked for England. The average strength in the islands, during the year, was 1,275 non-commissioned officers and men, among whom there were 978 admissions into hospital, and 14 deaths. Eight of the latter occurred out of hospital, and one invalid died at Portsmouth, while proceeding to the Invalid Depôt, making the total deaths 15. These numbers give the ratio of 767 admissions, and 11·75 deaths, per 1,000 of the

Bermuda. strength, the former considerably higher, and the latter rather lower, than in the preceding year.

The following Table shows the influence of the different classes of diseases in causing the sickness and mortality. The details for 1862 are given in Abstract No. XII. of Appendix.

		Average Strength, 1,275.				Annual ratio per 1,000.			
Orders.	Diseases.	Admitted into Hospital.	Died.			1862.		1859—61.	
			At Bermuda.	Of Invalids.	Total.	Admitted.	Died.	Admitted.	Died.
	Class I.								
1	Miasmatic Diseases.. ..	247	1	..	1	193 ·7	·78	186 ·6	·96
2	Enthetic „	89	..	..	..	69 ·8	..	58 ·3	..
3	Dietic „	69	1	..	1	54 ·1	·78	14 ·	..
4	Parasitic „	9	..	..	..	7 ·0	..	5 ·4	..
	Class II.								
1	Diathetic Diseases	3	1	..	1	2 ·4	·78	1 ·3	..
2	Tubercular „	14	1	..	1	11 ·0	·78	7 ·3	2 ·55
	Class III. Diseases of the—								
1	Nervous System	35	2	..	2	27 ·4	1 ·57	21 ·0	3 ·51
2	Circulatory „	11	2	1	3	8 ·6	2 ·36	3 ·8	·64
3	Respiratory „	88	..	..	..	69 ·0	..	47 ·5	..
4	Digestive „	74	1	..	1	58 ·0	·78	63 ·5	1 ·27
5	Urinary „	1	..	..	..	·8	..	1 ·0	..
6	Reproductive „	26	..	..	..	20 ·4	..	5 ·4	..
7	Locomotive „	3	..	..	..	2 ·4	..	3 ·8	..
8	Integumentary„	181	..	..	..	142 ·0	..	87 ·7	..
	Class IV.								
4	Diseases of Nutrition ..	3	..	..	..	2 ·4	..	2 ·5	..
	Class V.								
1	Accidents	124	4	..	4	97 ·2	3 ·14	69 ·8	1 ·59
4	Suicide	..	1	..	1	..	·78	..	1 ·59
6	Corporal Punishment ..	1	..	..	..	·8	..	1 ·3	..
	Diseases not specified ..	..	..	..	..	..	..	3 ·5	..
	No appreciable disease ..	..	..	..	..	..	..	1 ·0	..
	Total.. ..	978	14	1	15	767 ·0	11 ·75	584 ·7	12 ·11

This Table shows the increase in the admissions to have been chiefly in venereal, diseases of the integumentary system, and accidents.

Miasmatic Diseases are very slightly above the average. When subdivided into groups, they give the following results :—

Bermuda.

Diseases.	Admitted.	Died.	Ratio per 1,000 of Strength.			
			1862.		1859-61.	
			Admitted.	Died.	Admitted.	Died.
Paroxysmal Fevers..	3	..	2·3	..	1·3	·32
Continued „	21	1	16·5	·78	71·1	·64
Dysentery, Diarrhœa, and Cholera ..	90	..	70·6	..	45·3	..
Sorethroat and Influenza	35	..	27·4	..	7·3	..
Ophthalmia..	51	..	40·0	..	35·1	..
Rheumatism	34	..	26·7	..	23·0	..

Continued Fevers have been more prevalent than in 1861, though very much below the average of the three years 1859–61, which was raised greatly above the ordinary amount in these islands by the epidemic of 1860. Their prevalence in 1862 corresponded nearly with what occurs among Infantry serving at home.

Dysentery and *Diarrhœa* were considerably in excess of the average, and the increase in *Sorethroat* and *Influenza* was even more marked. These diseases may perhaps have been due in some measure to the necessity for keeping a portion of the troops under canvas, to avoid the overcrowding of the barracks which would otherwise have arisen from the increase to the force.

Dietic Diseases have experienced a great increase, the admissions from intemperance (*ebriositas*) having been more than three times as numerous as in 1861. This was confined to the 39th Regiment, in which 60 admissions into hospital took place under this heading, while there were only 3 from the Royal Artillery, and the same number from the Royal Engineers.

Diseases of the Integumentary System have given rise to a much higher proportion of admissions than formerly, the difference being chiefly in boils and ulcers. No reason is assigned by the Medical Officers for the increase of such cases.

Accidents and Violence.—Of the five deaths under this class, three were by accidental drowning, one by fractured skull, in a sapper who fell from a scaffolding, and one by a self-inflicted gunshot wound.

II. Nova Scotia and New Brunswick.

Nova Scotia and New Brunswick.

Her Majesty's Government having decided, towards the end of 1861, to augment largely the force in British America, 11 Batteries of Royal Artillery, two Companies of Royal Engineers, two Battalions of the Military Train, two Battalions of Foot Guards, and six Regiments of the Line, with detachments of the Army Hospital and Commissariat Staff Corps, embarked from England in December, 1861, and January, 1862. With the exception of the 1st Battalion 16th Regiment, which was landed at Bic, on the south shore of the St. Lawrence, and the head-quarters of the 96th Regiment, which were obliged to put back to Cork, in consequence of the ship in which they were embarked having been disabled at sea, the troops were all conveyed to Halifax, Nova Scotia, or St. John's, New Brunswick, and reached their destination at various dates, between the 26th of December and 11th of February. Two Batteries of Artillery, and a Company of Engineers, were sent to Bermuda, and a Battery of Artillery, and Company of Engineers, to Newfoundland. The rest of the troops were sent on to Canada, or remained in Nova Scotia and New Brunswick, to replace regiments which had already proceeded to that Colony.

The men were supplied, on embarkation from England, with suitable winter

Nova Scotia and New Brunswick.

clothing, and on their arrival at Halifax and St. John's, were quartered in buildings converted into temporary barracks, and which were found on trial to be comfortable, and well adapted for the emergency.

As the greater part of the force was to be stationed in Canada, arrangements were made to move it in detachments, closely following each other, across the Portage to Rivière du Loup, on the St. Lawrence. Temporary hospitals, with all the necessary appliances, were fitted up at the various halting places, and the necessary preparations made for the treatment of any cases of sickness which might occur on the line of march.

The troops from Halifax were conveyed in small steamers to St. John's, New Brunswick, or to St. Andrew's, about 60 miles west of St. John's. From St. John's the journey was performed on sleighs. From St. Andrew's there was a railway to Canterbury, about ten or twelve miles from Woodstock, and near which the two routes united.

The halting places, and the distance between each were as follows, starting from St. John's :—

To Petersville	30 miles
Fredericton	30 „
Tilleys	29 „
Woodstock	32 „
Florenceville	23 „
Grand Falls	24 „
Little Falls	36 „
Fort Ingall	37 „
Rivière du Loup	42 „

At the last-named station the Grand Trunk Railway of Canada begins, and by it the troops were forwarded to their destination.

The total number of non-commissioned officers and men who passed into Canada by this route, was 6,544, and two casualties only occurred among them during their transit. A Private of the 63rd Regiment was left behind at Petersville, labouring under inflammation of the lungs, which terminated fatally; and a Private of the 62nd Regiment was frozen to death at Fort Ingall, while in a state of intoxication. The number of cases of sickness which were admitted into hospital from this force was 387, and the deaths, inclusive of the two above mentioned, were 12. As the regiments composing this force were only for limited periods in the Command, it becomes necessary, before calculating the ratios, to reduce the strength to the *annual* average, which would be 477. The ratio of sickness and mortality, therefore, would be 811 and 25·16 respectively.

The preceding remarks refer to the force which was passing through the country, and remained in it but a short time. The average strength of the permanent force in the Colony during the year was 3,478, the admissions into hospital were 2,038, and the deaths 27, of which 11 occurred out of hospital. Three deaths also occurred among the invalids, making the total in the permanent force 30. These numbers give a proportion of 586 admissions, and 8·63 deaths, per 1,000 of the strength; the former being the same as in the preceding year, and the latter above the average.

The following Table, compiled from Abstract No. XII. of Appendix, shows the influence of the different classes of diseases on the sickness and mortality of the troops *en route*, and permanent force respectively :—

Nova Scotia and New Brunswick.

Orders.	Diseases.	Troops *en route.*		Permanent Force.				Annual Ratio per 1,000 of Strength.					
		Average Annual Strength, 477.		Mean Strength, 3,478.				Troops *en route.*		Permanent Force.			
					Deaths.					1862.		1859–61.	
		Admissions.	Deaths.	Admissions.	In Nova Scotia.	Of Invalids.	Total.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.
	Class I.												
1	Miasmatic Diseases	80	1	535	5	..	5	167·7	2·10	153·8	1·44	97·4	·19
2	Enthetic "	88	..	566	..	..	..	184·5	..	162·7	..	109·4	..
3	Dietic "	7	3	42	4	..	4	14·7	6·28	12·1	1·15	12·4	·19
4	Parasitic "	7	..	65	..	..	..	14·7	..	18·7	..	3·6	..
	Class II.												
1	Diathetic Diseases	..	..	4	2	..	2	..	..	1·1	·57	1·1	..
2	Tubercular "	7	..	23	4	2	6	14·7	..	6·6	1·73	18·6	2·66
	Class III.												
	Diseases of the—												
1	Nervous System	7	1	43	1	..	1	14·7	2·10	12·4	·29	14·4	·57
2	Circulatory "	3	1	11	5	1	6	6·3	2·10	3·2	1·73	3·6	·38
3	Respiratory "	73	4	133	3	..	3	153·0	8·38	38·2	·86	82·8	1·14
4	Digestive "	7	1	75	..	..	..	14·7	2·10	21·6	..	38·2	·57
5	Urinary "	2	1	3	..	..	..	4·2	2·10	·9	..	4·0	..
6	Reproductive "	2	..	9	..	..	..	4·2	..	2·6	..	2·7	..
7	Locomotive "	..	..	2	..	..	..	..	..	·6	..	3·6	..
8	Integumentary "	38	..	264	..	..	..	79·6	..	75·9	..	71·8	..
	Class IV.												
4	Diseases of Nutrition	..	..	3	..	..	..	..	..	·9	..	·2	..
	Class V.												
1	Accidents	65	..	253	2	..	2	136·2	..	72·7	·57	109·6	·76
3	Homicide	..	..	..	1	..	1	..	..	..	·29	..	..
4	Suicide	..	..	..	..	..	..	..	..	..	..	..	·19
6	Corporal Punishment	1	..	6	..	..	..	2·1	..	1·7	..	·6	..
	No appreciable disease	..	..	1	..	..	..	..	..	·3	..	..	..
	Diseases not stated	..	..	..	..	..	..	..	..	..	..	4·0	..
	Total	387	12	2,038	27	3	30	811·3	25·16	586·0	8·63	578·0	6·65

Nova Scotia and New Brunswick.

From this Table it will be seen that the ratio of admissions into hospital was much higher among the troops *en route* than in the permanent force. As might have been anticipated, from the circumstances in which they were respectively placed, the excess has been chiefly in diseases of the respiratory system, accidents, and venereal diseases. The ratio of deaths appears high, but it must be remembered that the time these troops were under observation was very short, so that a fair average could hardly be expected. Of the deaths, also, four were the direct result of intoxication, or exposure to the intense cold while in that condition, and four were from inflammatory affections of the lungs, probably caused by exposure to cold. The fatal case of erysipelas was supposed to have been induced by the same cause.

Miasmatic Diseases prevailed to nearly the same extent in both descriptions of force, and were much more common than on the average of the three preceding years. On subdividing them as usual, the following results are obtained :—

Diseases.	Troops *en route.*		Permanent Force.		Annual Ratio per 1,000 of Strength.					
					Troops *en route.*		Permanent Force.			
							1862.		1859-61.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Eruptive Fevers ..	..	..	2	..	..	..	·6	..	2·1	·19
Paroxysmal ,, ..	..	..	12	..	..	..	3·4	..	·2	..
Continued ,, ..	8	..	66	4	16·8	..	19·0	1·15	8·5	..
Dysentery, Diarrhœa, and Cholera ..	7	..	47	..	14·7	..	13·5	..	17·5	..
Sorethroat and Influenza	37	..	174	..	77·5	..	50·0	..	23·0	..
Ophthalmia	3	..	56	..	6·3	..	16·1	..	15·2	..
Rheumatism	23	..	146	..	48·2	..	42·	..	23·7	..

It will be seen from this Table that the excess of miasmatic diseases among the troops *en route* was confined to sorethroat and influenza, and to rheumatism. Continued fevers, though less prevalent than in the permanent force, were double the usual average of the Command, a result which may probably have arisen partly from the unavoidable crowding of the men in barracks, and partly from the irregularities in which they appear to have indulged.

The increase in the amount of continued fevers in the permanent force was due to another cause. During the summer, arrangements were carried out to provide an abundant supply of water in Halifax, and it became necessary to open the roads in the neighbourhood and the streets of the town to a great extent, for the purpose of laying down pipes. In the progress of these works numerous drains and sewers were opened, and noxious accumulations of filth took place, while at the same time the water supply was very defective. Fever of a typhoid character prevailed to a great extent among the civil population, and also affected, though in a very minor degree, the troops quartered in the neighbourhood of these operations. The 2nd Battalion 17th Regiment, in the Wellington Barracks, appears to have suffered most, 35 cases having occurred in it, of which 9 were admitted in August and 14 in September. Of the four deaths, two were in the 17th Regiment, one in the Royal Artillery, and one in the 16th Regiment.

Sorethroat and Influenza were much above the average in the permanent force, though still greatly below the proportion among the troops *en route.* This increase was, however, more than compensated by the reduction in the cases of bronchitis.

Enthetic Diseases were, as might have been anticipated, greatly increased during the year as compared with previous periods.

Nova Scotia and New Brunswick.

Dietic Diseases amounted exactly to the average; but four deaths in each description of force were caused by them, all of them the result of intoxication.

Diseases of the Respiratory System were considerably under half the usual average, the difference being chiefly in the amount of bronchitis. As already stated, this may be, to some extent, accounted for by the increased number returned as influenza; but even with the addition of these, the proportion in the permanent force was low.

The other classes of diseases do not seem to require special remark.

III. Canada.

Canada.

The average strength of the troops in Canada during the year was 10,763. The admissions into hospital amounted to 7,176, the deaths in hospital to 52, out of hospital to 28, and among the invalids to 10, making a total of 90. These numbers give the ratio of 667 admissions and 8·36 deaths per 1,000 of the strength.

The following Table shows the influence of the different classes of diseases in producing this sickness and mortality. The details for 1862 will be found in Abstract No. XII. of Appendix:—

Orders.	Diseases.	Strength, 10,763.				Annual Ratio per 1,000.			
			Deaths.			1862.		1859-61.	
		Admissions.	In Canada.	Of Invalids.	Total.	Admissions.	Deaths.	Admissions.	Deaths.
	Class I.								
1	Miasmatic Diseases ..	1,574	11	..	11	146·3	1·02	120·0	1·19
2	Enthetic „	1,564	1	..	1	145·3	·09	116·1	..
3	Dietic „	173	1	..	1	16·1	·09	23·9	·24
4	Parasitic „	81	..	..	..	7·5	..	5·5	..
	Class II.								
1	Diathetic Diseases	21	..	..	..	1·9	..	1·7	..
2	Tubercular „	85	8	6	14	7·9	1·30	6·3	1·54
	Class III. Diseases of the								
1	Nervous System	173	10	..	10	16·1	·93	16·6	1·31
2	Circulatory „	32	5	..	5	3·0	·46	3·8	1·07
3	Respiratory „	682	11	1	12	63·4	1·12	69·8	1·90
4	Digestive „	434	5	..	5	40·3	·46	34·9	·35
5	Urinary „	23	..	2	2	2·1	·19	2·8	·12
6	Reproductive „	77	..	..	..	7·1	..	4·0	..
7	Locomotive „	37	..	..	..	3·4	..	2·5	..
8	Integumentary „	1,022	1	1	2	95·0	·19	72·5	..
	Class IV.								
4	Diseases of Nutrition ..	4	..	..	..	·4	..	1·1	..
	Class V.								
1	Accidents	1,175	20	..	20	109·2	1·86	81·5	1·90
3	Homicide	1	3	..	3	·1	·28	..	·12
4	Suicide	1	3	..	3	·1	·28	..	·24
5	Execution	..	1	..	1	..	·09	..	..
6	Corporal Punishment ..	8	..	..	..	·7	..	1·2	..
	Diseases not specified ..	9	..	..	..	·8	..	·8	..
	Total	7,176	80	10	90	666·7	8·36	565·0	9·98

Canada.

This Table shows an increase in the admissions, chiefly in miasmatic and venereal diseases and in accidents, and a slight reduction in the deaths compared with the average of the three preceding years.

Miasmatic Diseases, when subdivided, give the following results :—

Diseases.	Admitted.	Died.	Ratio per 1,000 of Mean Strength. 1862. Admitted.	1862. Died.	1859-61. Admitted.	1859-61. Died.
Eruptive Fevers	43	..	4·0	..	1·1	·12
Paroxysmal ,, ...	79	2	7·3	·19	3·7	..
Continued ,, ...	253	6	23·5	·56	15·8	·71
Dysentery, Diarrhœa, and Cholera ..	255	..	23·7	..	34·5	..
Sorethroat and Influenza	374	..	34·8	..	14·1	..
Ophthalmia	144	..	13·4	..	19·0	..
Rheumatism	314	1	29·2	·09	25·8	·12

The principal increase in diseases of this class has been in sorethroat and influenza and in continued fevers, and has probably been the result of the peculiar circumstances in which the force was placed. Indeed, if it be considered that upwards of one-half of the troops performed the march from Nova Scotia to Canada in the depth of winter, and that from the sudden accession to the numbers a considerable degree of overcrowding in barracks was, for a time at least, unavoidable, it is satisfactory to find the increase in the admissions so comparatively trifling, and that it has been unattended by any increase in the mortality.

Enthetic Diseases show a considerable increase, a result which might have been anticipated, the more especially as, from the sudden emergency under which the troops were sent from England, the wives of the married soldiers were necessarily left behind.

The other classes of diseases differ so little from the average of the preceding three years as scarcely to require any special notice.

In consequence of the numerous movements of the troops we have not given the usual statement of the amount of sickness and mortality in each corps serving in the different North American Commands. The following Table affords this information for them collectively :—

Canada.

	Annual Average Strength.	Admitted into Hospital.	Deaths.				Annual ratio per 1,000.	
			In Hospital.	Out of Hospital.	Of Invalids.	Total.	Admitted.	Died.
Royal Artillery ..	2,486	2,154	19	9	1	29	866	11·66
„ Engineers ..	393	310	3	..	..	3	738	7·14
Military Train ..	459	479	3	1	..	4	1,044	8·71
1st Batt., Grenadier Guards ..	831	635	3	..	..	3	764	3·61
1st Batt., Scots Fusilier Guards ..	807	514	1	1	..	2	637	2·48
1st Batt., 15th Regt...	645	471	4	3	1	8	730	12·40
1st Batt., 16th Regt...	788	831	3	1	3	7	1,055	8·90
2nd Batt., 16th Regt..	854	502	3	3	1	7	588	8·20
1st Batt., 17th Regt. .	794	381	1	3	1	5	480	6·30
2nd Batt., 17th Regt..	838	338	2	4	..	6	403	7·16
30th Regiment ..	822	411	5	3	..	8	500	9·73
47th Regiment ..	791	506	5	1	..	6	640	7·59
4th Batt., 60th Regt.	831	408	1	1	1	3	491	3·61
62nd Regiment ..	752	502	3	3	2	8	668	10·64
63rd Regiment ..	787	410	5	2	1	8	522	10·17
Detachment 96th Regt.	62	60	..	..	..	..	968	..
1st Batt., Rifle Brig. .	834	344	7	5	1	13	412	15·59
Royal Canadian Rifles.	1,077	426	7	2	1	10	396	9·29
Royal Newfoundland Companies.. ..	143	67	..	1	1	2	469	13·99

This Table shows the highest ratio of admissions to have been in the 1st Battalion 16th Regiment, which was one of the newly-arrived corps, and throughout the year was quartered in Montreal, and of deaths, in the 1st Battalion Rifle Brigade, also in Canada. The 2nd Battalion 17th Regiment, which, like the 16th, had arrived in the beginning of the year, and was quartered in Halifax, had the lowest ratio of admissions, and the Scots Fusilier Guards, in Montreal, the lowest ratio of deaths.

IV.—NEWFOUNDLAND.

On the 21st of January, 1862, the 8th Battery, 10th Brigade, R.A., arrived in Newfoundland, from England, as an augmentation to the force. On the 15th of November a Company of the Royal Canadian Rifles arrived from Quebec, and on the 30th of the same month the Royal Newfoundland Companies were disbanded, the greater portion of the men being transferred as Volunteers to the Canadian Rifles.

The average strength of the troops during the year was 273 non-commissioned officers and men, among whom 167 admissions into hospital, and two deaths, occurred. There was also one death among the invalids sent to England, which makes the total mortality three. These numbers give the proportion of 612 admissions, and 10·98 deaths per 1,000 of mean strength. The proportion furnished by the different corps was as follows:—

Newfoundland.

	Average Annual Strength.	Admissions into Hospital.	Deaths.			Ratio per 1,000.	
			In Hospital.	Out of Hospital.	Of Invalids.	Admitted.	Died.
Royal Artillery..	108	87	..	..	..	806	..
Royal Newfoundland Companies	143	67	..	1	1	468	13·99
Detachment Royal Canadian Rifles	22	11	1	..	..	500	45·45

The high ratio of deaths in the Canadian Rifles is of course simply a result of the small numbers under observation.

The diseases which caused the admissions and deaths are stated in Abstract No. XII. of Appendix, from which the following classified summary has been prepared :—

Orders.	Diseases.	Strength, 273.				Annual Ratio per 1,000.					
			Deaths.			1862.		1859-61.		Nova Scotia, &c. 1862.	
		Admissions.	In Newfoundland.	Of Invalids.	Total.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.
	Class I.										
1	Miasmatic Diseases ..	40	..	..	..	146·5	..	477·4	..	153·8	1·44
2	Enthetic ,, ..	25	..	..	..	91·6	..	22·6	..	162·7	..
3	Dietic ,, ..	8	1	..	1	29·3	3·66	38·7	..	12·1	1·15
4	Parasitic ,, ..	3	..	..	..	11·0	..	3·2	..	18·7	..
	Class II.										
1	Diathetic Diseases ..	..	..	..	..	..	..	9·7	..	1·1	·57
2	Tubercular ,, ..	..	..	1	1	..	3·66	16·1	..	6·6	1·73
	Class III. Diseases of the—										
1	Nervous System ..	7	1	..	1	25·6	3·66	66·1	1·61	12·4	·29
2	Circulatory ,, ..	..	..	..	..	..	..	37·1	..	3·2	1·73
3	Respiratory ,, ..	28	..	..	..	102·6	..	132·3	3·22	38·2	·86
4	Digestive ,, ..	9	..	..	..	32·9	..	69·4	..	21·6	..
5	Urinary ,, ..	1	..	..	..	3·7	..	1·6	..	·9	..
6	Reproductive ,, ..	2	..	..	..	7·3	..	3·2	..	2·6	..
7	Locomotive ,, ..	2	..	..	..	7·3	..	12·9	..	·6	..
8	Integumentary ,, ..	9	..	..	..	32·9	..	83·9	..	75·9	..
	Class IV.										
4	Diseases of Nutrition	..	..	..	..	..	..	..	..	·9	..
	Class V.										
1	Accidents	33	..	..	..	120·9	..	154·8	..	72·7	·57
4	Suicide	..	..	..	..	..	..	..	..	..	·29
6	Corporal Punishment	..	..	..	..	..	..	4·8	..	1·7	..
	No appreciable disease	..	..	..	..	..	..	..	..	·3	..
	Diseases not stated ..	..	..	..	..	..	..	8·1	..	..	..
	Total	167	2	1	3	611·6	10·98	1141·9	4·83	586·0	8·63

The admissions have been little more than half the average of the three preceding years, the difference being chiefly in miasmatic diseases, those of the nervous and respiratory systems, and in accidents. There has, however, been a great increase in the amount of venereal. The miasmatic diseases, in which

Newfoundland.

the reduction principally took place, were sorethroat and influenza, which in the previous years had prevailed as an epidemic, and rheumatism. The great difference in the prevalence of the various classes of diseases appears due to the change in the constitution of the force, which had previously been composed principally of old soldiers, who were not remarkable for habits of temperance, and of whom a large proportion was married; while in 1863 two-fifths, at least, were young soldiers. It will be observed that the diseases, with a few exceptions, which may be explained by the difference in the constitution of the force, closely resemble those of the troops in Nova Scotia.

V. British Columbia.

British Columbia.

The force consisted, as before, of a Company of the Royal Engineers; the average strength was 129, the admissions into hospital amounted to 90, and 1 death occurred. These numbers give the ratio of 698 admissions, and 7·75 deaths, per 1,000 of the strength. Of the cases, 28 were accidents, chiefly arising from the nature of the employment of the men, 24 were sorethroat and influenza, 9 were diarrhœa, and 8 gonorrhœa. The only death was from dropsy, in a man of intemperate habits. With the exception of this, and of a case of severe frostbite, the diseases are all stated to have been of an unimportant nature. They will be found detailed in Abstract No. XII. of Appendix. Small-pox was prevalent in Victoria and New Westminster, but no cases occurred among the soldiers or their families. Assistant-Surgeon Seddall took the opportunity of vaccinating a number of the townspeople and upwards of 300 Indians established at different localities on the Fraser River, with most beneficial results in checking the spread of the disease.

Section II.

On the Extent of Invaliding.

The following Table shows the number of invalids sent home from each of the North American Commands, during the year 1862, with the classes of diseases for which the invaliding took place. The diseases will be found specified in Abstract No. XIII. of Appendix.

Invalids sent Home.	Bermuda.		Nova Scotia and New Brunswick.		Canada.		Newfoundland.	
	For Discharge.	For change of Climate.	For Discharge.	For change of Climate.	For Discharge.	For change of Climate.	For Discharge.	For change of Climate.
Miasmatic Diseases	2	4	1	5	7	9	..	..
Enthetic ,, ...	..	1	..	1	3	13	..	..
Constitutional ,, ...	..	..	..	..	1	2	..	..
Tubercular ,, ...	1	..	8	2	19	17	..	..
Diseases of the—								
Nervous System	..	..	2	..	18	2	..	..
Circulatory ,, ...	..	1	..	5	11	..	..	..
Respiratory ,, ...	..	..	..	3	3	15	..	..
Digestive ,, ...	..	..	1	1	2	6	..	..
Urinary ,, ...	..	..	..	..	2	3	..	..
Locomotive ,, ...	..	..	1	1	7	2	..	..
Integumentary ,, ...	..	1	..	3	2	1	..	..
Diseases of Nutrition	..	..	1	..	2	..	..	..
Accidents, Violence, &c. ..	..	..	2	..	6	..	..	..
Total	3	7	16	21	83	70	..	..
Annual ratio per 1,000 of Strength 1862 ..	2·36	5·50	4·60	6·04	7·71	6·50	..	..
1860–1 .	6·30	11·64	20·48	9·52	10·83	3·20	9·73	12·16

British America.

As might have been expected when so large a proportion of the force had recently been sent out from England in an efficient condition, the number of men sent home as invalids has been much below the average. Tubercular diseases, and those of the nervous system, have, as formerly, been the principal causes of invaliding. The circumstance of none having been sent home as invalids from the Newfoundland Companies probably arose from the circumstance of their being disbanded, when the non-effective men would be pensioned on reduction instead of being invalided.

The following Table shows the numbers of the invalids finally discharged the service, and the disabilities for which they were discharged:—

Causes of Disability.	Bermuda.	Canada, Nova Scotia, &c., and Newfoundland.
Rheumatism and Chronic Pains	2	10
Venereal	1	12
Cachexia and Scrofula	..	6
Weakly Constitution and Debility	1	3
Mental Diseases	..	7
Paralysis	..	5
Epilepsy	..	6
Eye Diseases	2	8
Deafness	..	4
Cardiac Disease	1	11
Pulmonary ,,	3	46
Dysentery and Hepatic Disease	..	1
Hernia	..	4
Stricture and Urinary Diseases	..	3
Ulcers and Varix	..	5
Contractions	..	7
Dislocations, Fractures, and Amputations	1	7
Worn out	..	1
Total	11	146
Ratio per 1,000 of Mean Strength 1862	8·63	9·80
1860–61	6·70	13·23

From this it will be seen that the chief causes of invaliding have been pulmonary disease, venereal, cardiac disease, and rheumatism. The reduction of the proportion in 1862 probably has arisen from the circumstance of so large a portion of the force having just arrived from the United Kingdom, and having of course left behind, on embarkation, any weakly or inefficient men.

Section III.

Mean Daily Sick.

During the year 1862 the number constantly sick in Bermuda amounted to 38, in Nova Scotia and New Brunswick to 93, in Canada to 302, and in Newfoundland to 8. These numbers give the following results:—

British America.

	Bermuda.		Nova Scotia and New Brunswick.		Canada.		Newfoundland.	
	1862.	1859-61.	1862.	1859-61.	1862.	1859-61.	1862.	1859-61.
Ratio per 1,000 of strength constantly sick ..	29·80	33·16	26·74	25·64	28·06	28·29	29·30	40·32
Average sick time to each soldier	days 10·88	days 12·10	days 9·76	days 9·36	days 10·24	days 10·32	days 10·70	days 14·72
Average duration of the cases of disease	14·18	20·70	16·66	16·19	15·36	18·27	17·48	12·89

The results correspond closely with the average of the three preceding years. There is a reduction, however, in the ratio constantly sick, and in the duration of the cases, in Bermuda and Newfoundland, the former resulting from the amount in 1860 having been greatly in excess, and the latter from the reduction of the Newfoundland Companies, which was in progress during the year.

Section IV.

Influence of Age on the Mortality.

The number of men serving, and the deaths at each age, in quinquennial periods, are shown in Abstract No. XIV. of Appendix, of which the following Table is a summary :—

Stations.	Ratio of Deaths per 1,000 of Strength at each age.					
	Under 20.	20–24.	25–29.	30–34.	35–39.	40 and upwards.
Bermuda	..	9·35	19·35	5·32	..	..
Canada, Nova Scotia, New Brunswick, and Newfoundland ..	1·57	6·43	11·96	8·55	8·96	13·70
Total 1862 ..	1·53	6·68	12·71	8·25	8·65	13·60
Total 1859–61 ..	4·88	6·12	8·14	12·90	20·07	9·90

The results for the three years 1859–61 show a progressive increase of mortality with the advance of life, very closely resembling that among the troops serving at home, with the exception of the periods 35-39, and 40 and upwards ; in the former, the ratio is considerably higher, and in the latter much lower than at home, but the numbers above 40 are too few to warrant any deductions from this difference.

IV.—ON THE HEALTH OF THE TROOPS SERVING IN THE WEST INDIES.

Section I.

Sickness and Mortality.

I. Windward and Leeward Command.

I. White Troops.

Windward and Leeward Command.

The Force employed remained the same as in 1861, except that on the 11th of December the 8th Battery 15th Brigade, R.A., arrived from England, and on the same date three Companies of the 1st Battalion 14th Regiment, from Jamaica, relieved the Companies previously serving in the Command.

The average strength of the white troops during the year was 1,222; the admissions into hospital among them amounted to 1,434; the deaths in hospital to 11, out of it, to 4, and one invalid died at Portsmouth, making a total of 16 deaths. The sickness, therefore, was in the ratio of 1,173, and the deaths of 13·10 per 1,000 of mean strength—both being considerably higher than in 1861.

The diseases by which the admissions into hospital and deaths were caused, will be found detailed in Abstract No. XV. of Appendix, from which the following classified summary has been prepared:—

		1862.						1859–61.	
		Strength, 1,222.				Ratio per 1,000.		Ratio per 1,000.	
			Died.						
Orders.	Diseases.	Admitted.	In the Command.	Of Invalids.	Total.	Admitted.	Died.	Admitted.	Died.
	Class I.								
1	Miasmatic Diseases. ..	742	7	1	8	607·2	6·55	512·2	3·75
2	Enthetic ,, ...	121	..	..	..	99·0	..	105·7	..
3	Dietic ,, ...	50	..	..	..	40·9	..	21·2	·27
4	Parasitic ,, ...	6	..	..	..	4·9	..	2·7	..
	Class II.								
1	Diathetic Diseases . ..	13	..	..	..	10·6	..	4·8	..
2	Tubercular ,, ...	4	1	..	1	3·3	·82	12·6	1·34
	Class III.								
	Diseases of the—								
1	Nervous System.. ..	35	4	..	4	28·6	3·27	34·3	1·87
2	Circulatory ,, ...	11	2	..	2	9·0	1·64	2·1	·54
3	Respiratory ,, ...	34	..	..	..	27·8	..	33·3	·54
4	Digestive ,, ...	70	..	..	..	57·3	..	81 0	·80
5	Urinary ,, ...	1	..	..	..	·8	..	·5	..
6	Reproductive ,, ...	36	..	..	..	29·5	..	7·8	..
7	Locomotive ,, ...	7	..	..	..	5·7	..	4·3	..
8	Integumentary ,, ...	185	..	..	..	151·4	..	163·3	..
	Class IV.								
4	Diseases of Nutrition ..	..	..	..	..	..	..	2·1	..
	Class V.								
1	Accidents	113	1	..	1	92·5	·82	96·3	·54
4	Suicide	..	..	..	..	..	..	·3	·54
6	Corporal Punishment ..	6	..	..	..	4·9	..	1·6	..
	Diseases not stated. ..	..	..	..	..	..	..	5·9	..
	Total	1,434	15	1	16	1173·4	13·10	1092·0	10·19

Windward and Leeward Command.

This Table shows miasmatic diseases to have been the chief cause of the increased sickness and mortality. The admissions by dietic diseases have been nearly double the average, but there has been a considerable reduction in those by diseases of the respiratory system.

Miasmatic Diseases, when subdivided give the following results :—

Diseases.	Admitted.	Died.	Ratio per 1,000 of Mean Strength.			
			1862.		1859–61.	
			Admitted.	Died.	Admitted.	Died.
Eruptive Fevers	1	..	·8	..	2·7	..
Paroxysmal „	461	6	377·3	4·91	250·7	3·49
Continued „	10	..	8·2	..	49·3	·27
Dysentery, Diarrhœa, & Cholera	59	..	48·3	..	45·3	..
Sorethroat and Influenza ..	14	1	11·4	8·82	9·7	..
Ophthalmia	157	..	128·5	..	112·6	..
Rheumatism	27	..	22·1	..	27·6	..

Paroxysmal Fevers have been much more prevalent than usual, but there has been a reduction in those of the continued form; combining the two, however, the admissions have been in the ratio of 86 per 1,000 of the strength above the average of the three preceding years. The excess has been chiefly caused by the prevalence of intermittent fevers in British Guiana, and by an epidemic of remittent and yellow fever at Barbadoes.

During the month of August several cases of yellow fever were reported to have occurred among the civil population of Bridgetown and suburbs. On the 28th the Chaplain to the Forces was attacked, and on the 30th a case occurred among the men of the 21st Regiment, who were in temporary occupation of the Stone Barracks during the repair of the Brick Barracks. A second case was admitted into hospital on the following day, and, as a measure of precaution, on the 2nd of September the men were removed from the ground floor of the Stone Barrack, in which these two cases had occurred. On the 4th of September they were also moved from the upper floor, and placed under canvas behind the canteen. As the disease continued to spread, the Royal Artillery were encamped on the 15th at the Naval Hospital, a place to the south-east of the garrison, at an elevation of about 75 feet, above the sea, and on the 16th the 1st Battalion 21st Regiment marched to Gun Hill, 6 miles from St. Ann's, and 730 feet above the sea, where the men were placed under canvas. This measure was attended in both instances with most beneficial results. Yellow fever, however, continued to prevail till early in October among the officers and European non-commissioned officers of the West India Regiment and a few of the men of the 21st Regiment, who had been unavoidably left behind at St. Ann's. A few cases occurred afterwards, but the disease had disappeared from the town and its neighbourhood by the middle of November.

The following Table shows the extent to which yellow fever prevailed among the white troops :—

	Strength.	Cases of Yellow Fever.	Died.	Ratio per 1,000 of Strength.	
				Cases.	Deaths.
Officers	66	14	9	212	136·4
Non-Commissioned Officers and Men	803	27	5	34	6·23
Women	111	10	3	90	27·03
Children	182	6	..	33	..

This shows the mortality to have been extremely high among the officers, a result which may probably have been due to the circumstance that those of

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the West India Regiment were not removed from St. Ann's when the white troops were sent to Gun Hill and the Naval Hospital, but continued to occupy the Brick Barracks for some time, and afterwards tents which were pitched behind them. Of the nine fatal cases among the officers, four occurred in the 1st, and one in the 3rd West India Regiment, one in the 1st Battalion 21st Regiment, and three in the Staff. The cessation of yellow fever among the troops, immediately upon their removal from St. Ann's, would seem to indicate a local origin of the disease. During the course of this epidemic, remittent fever was unusually prevalent in Barbadoes, but none of the cases terminated fatally.

During the year intermittent fever was very prevalent among the white troops in British Guiana, 159 cases having been admitted into hospital out of an average strength of 144 men.

Ophthalmia was more prevalent than on the average of the three preceding years. It was chiefly in Barbadoes, and confined to the 21st Regiment, only two cases having occurred in the Royal Artillery.

DIETIC DISEASES.—The admissions by this class of diseases have all been from intemperance (*ebriositas*), and have been nearly double the average of the three preceding years. Of 50 admissions from this cause, 32 were in Barbadoes, and 14 in Trinidad, being in the proportion of 10·3 and 20·6 per 1,000 of the strength in each of these islands.

The relative prevalence of the different classes of diseases at each of the subordinate stations in the Command, is shown in the following Table, framed from Abstract No. XV. of Appendix:—

Orders.	Diseases.	Ratio per 1,000 of Mean Strength in 1862.							
		Barbadoes.		St. Lucia.		Trinidad.		British Guiana.	
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
	Class I.								
1	Miasmatic Diseases ..	504·5	7·74	522·7	..	608·2	5·15	1277·9	..
2	Enthetic ,, ..	130·3	..	113·6	..	20·6	..	20·8	..
3	Dietic ,, ..	41·3	..	22·7	..	72·2	..	6·9	..
4	Parasitic ,, ..	6·5	..	..	..	..	..	6·9	..
	Class II.								
1	Diathetic Diseases ..	10·3	..	..	..	20·6	..	6·9	..
2	Tubercular ,, ..	5·2	1·29	..	..	..	..	..	..
	Class III. Diseases of the—								
1	Nervous System ..	24·5	5·16	11·4	..	67·0	..	13·9	..
2	Circulatory ,, ..	11·6	2·58	..	..	5·2	..	6·9	..
3	Respiratory ,, ..	34·8	..	..	..	20·6	..	34·7	..
4	Digestive ,, ..	40·0	..	113·6	..	103·1	..	55·6	..
5	Urinary ,, ..	1·3	..	..	..	..	..	..	..
6	Reproductive ,, ..	29·7	..	..	..	46·4	..	27·8	..
7	Locomotive ,, ..	6·5	..	..	..	10·3	..	..	..
8	Integumentary ,, ..	170·3	..	90·9	..	108·3	..	145·8	..
	Class IV.								
4	Diseases of Nutrition..	..	..	..	..	..	..	..	..
	Class V.								
1	Accidents	95·5	..	102·3	11·36	97·9	..	69·4	..
6	Corporal Punishment..	7·7	..	..	..	..	..	..	..
	Total ..	1120·0	16·77	977·2	11·36	1180·4	5·15	1673·5	..
	Ratio per 1,000 in 1859–61 ..	1014·5	5·11	886·2	6·91	1287·7	29·88	1343·6	8·81

Except in Trinidad, the admissions have been higher than the average of the three preceding years, but in Demerara, though still very high, they have been lower than in 1861. The ratio of deaths has been very low, except at Barbadoes, and even there, notwithstanding the outbreak of yellow fever, it was under one and three-quarters per cent.

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II. BLACK TROOPS.

The average strength of the black troops in the Command, in 1862, was 1,164. There were 937 admissions into hospital, and 22 deaths, of which 3 occurred out of hospital. The sickness, therefore, was in the ratio of 805, and the mortality of 18·92 per 1,000 of mean strength, being a little below the results of the preceding year.

The following Table, compiled from Abstract No. XVII. of Appendix, and from previous Reports, shows the influence of the different classes of diseases upon black troops in this Command :—

Orders.	Diseases.	1862. Strength 1,164. Admitted.	Died.	1862. Ratio per 1,000. Admitted.	Died.	1859-61. Ratio per 1,000. Admitted.	Died.
	Class I.						
1	Miasmatic Diseases	356	4	305·8	3·44	298·2	5·54
2	Enthetic ,, ...	202	..	173·5	..	210·4	..
3	Dietic ,, ...	1	..	·9	..	·6	..
4	Parasitic ,, ...	1	..	·9	..	1·2	..
	Class II.						
1	Diathetic Diseases	3	..	2·6	..	6·1	·58
2	Tubercular ,, ...	14	6	12·0	5·16	17·2	6·12
	Class III. Diseases of the—						
1	Nervous System	13	2	11·2	1·72	18·7	2·05
2	Circulatory ,, ...	6	1	5·2	·86	3·2	1·17
3	Respiratory ,, ...	65	4	55·8	3·44	92·1	2·05
4	Digestive ,, ...	49	..	42·1	..	35·9	·87
5	Urinary ,, ...	..	..	..	..	2·0	·87
6	Reproductive ,, ...	30	..	25·8	..	5·2	..
7	Locomotive ,, ...	6	..	5·1	..	2·0	..
8	Integumentary ,, ...	122	..	104·8	..	152·1	·29
	Class IV.						
4	Diseases of Nutrition	4	2	3·4	1·72	1·2	..
	Class V.						
1	Accidents	62	1	53·3	·86	79·6	·58
3	Homicide	..	1	..	·86	·6	·58
4	Suicide	..	..	..	..	..	·87
5	Execution	..	1	..	·86	..	..
6	Corporal punishment	2	..	1·7	..	6·7	..
	Diseases not specified	1	..	·9	..	18·9	..
	Total	937	22	805·0	18·92	951·9	21·57

The admissions into hospital have been considerably under the average of the three preceding years, the difference being chiefly in venereal, diseases of the respiratory and integumentary systems, and in accidents and injuries.

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There has also been a slight reduction in the deaths, principally in those from miasmatic diseases.

Miasmatic Diseases, when subdivided into groups, give the following results:—

Diseases.	Admitted.	Died.	Annual Ratio per 1,000 of Mean Strength.			
			1862.		1859-61.	
			Admitted.	Died.	Admitted.	Died.
Eruptive Fevers	11	..	9·5	..	34·1	·58
Paroxysmal „	119	1	102·2	·86	90·6	2·04
Continued „	3	..	2·6	..	15·7	1·16
Dysentery, Diarrhœa, and Cholera ..	20	1	17·2	·86	18·1	1·46
Sorethroat and Influenza	61	..	52·4	..	18·1	..
Ophthalmia	33	..	28·3	..	24·2	..
Rheumatism	79	1	67·9	·86	91·8	·29

Eruptive Fevers show a very marked diminution; only 11 cases occurred, of which 8 were small-pox, and 3 measles.

Paroxysmal Fevers were above the average, and considerably in excess of their amount in 1862; this was chiefly from the prevalence of remittent fever at Barbadoes. No cases of yellow fever, which was so fatal to the European officers and non-commissioned officers of the West India Regiment, occurred among the black soldiers.

Sorethroat and Influenza were also much more prevalent than usual, chiefly during the first quarter of the year.

Tubercular Diseases are still the principal cause of mortality among the black troops.

Diseases of the Respiratory System are also very fatal. These two classes together gave rise to nearly half the deaths during the year, and to a ratio of mortality closely approximating that from all causes among the troops generally in the United Kingdom. The causes of this great prevalence of tubercular and pulmonary diseases among the black troops seem deserving of careful investigation.

Corporal Punishment.—The reduction in the amount of this form of punishment, which was noticed in last Report, has been progressive. In 1862 it was only twice inflicted, being in the proportion of 1·7 per 1,000 of the strength, or rather lower than among the troops at home.

The ratio of admissions and deaths per 1,000 of the strength in each of the subordinate stations, and by the different classes of diseases, is shown in the following Table, prepared from Abstract No. XVII. of Appendix:—

Windward and Leeward Command.

Orders.	Black Troops.	Annual Ratio per 1,000 of Strength in 1862.							
		Barbadoes.		St. Lucia.		Trinidad.		British Guiana.	
	Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
	Class I.								
1	Miasmatic Diseases	393·0	3·04	241·4	11·49	247·8	..	170·0	3·33
2	Enthetic ,,	212·5	..	34·5	..	132·8	..	150·0	..
3	Dietic ,,	1·5	..	..	..	..	..	..	..
4	Parasitic ,,	..	..	..	..	..	..	3·3	..
	Class II.								
1	Diathetic Diseases	3·0	..	..	..	8·8	..	..	..
2	Tubercular ,,	10·6	6·07	23·0	..	17·7	..	10·0	6·66
	Class III. Diseases of the—								
1	Nervous System	12·1	1·52	..	..	8·8	..	13·3	3·33
2	Circulatory ,,	6·1	1·52	..	..	8·8	..	3·3	..
3	Respiratory ,,	63·7	4·55	114·9	..	44·3	..	30·0	3·33
4	Digestive ,,	44·0	..	57·5	..	44·3	..	16·7	..
6	Reproductive ,,	31·9	..	..	..	26·5	..	20·0	..
7	Locomotive ,,	1·5	..	..	..	17·7	..	6·7	..
8	Integumentary ,,	115·3	..	34·5	..	106·2	..	106·7	..
	Class IV.								
4	Diseases of Nutrition	4·6	1·52	11·5	11·49	..	..	..	..
	Class V.								
1	Accidents	59·2	..	57·5	11·49	35·4	..	43·3	..
3	Homicide	..	1·52	..	..	8·8	..	..	..
5	Execution	..	1·52	..	..	..	..	..	..
6	Corporal Punishment ..	3·0	..	..	..	..	..	..	..
	Diseases not stated	..	..	..	..	..	..	3·3	..
	Total	962·0	21·26	574·8	34·47	707·9	..	576·6	16·65
	Average of 1859-61	1041·8	20·38	742·1	15·72	879·7	28·48	866·2	23·81

Compared with the results of the three preceding years, there has been a considerable reduction in the admissions into hospital in 1862, at all the stations. The irregularity in the ratios of deaths depends probably on the small numbers under observation, except in Barbadoes.

II. JAMAICA.

I. WHITE TROOPS.

Jamaica.

The white troops employed in Jamaica in 1862 consisted, as in the preceding year, of a Battery of Royal Artillery, and the head-quarters and 6 companies of the 1st Battalion 14th Regiment, till the end of November, when the 7th Battery, 15th Brigade, R.A., arrived from England.

The average strength of the white troops during the year was 702, the admissions into hospital were 452, the deaths in hospital 3, out of hospital 5, and of invalids 1. These numbers give a ratio of 644 admissions, and 12·81

Jamaica. deaths, per 1,000 of mean strength, the former being considerably lower, and the latter one-third higher than the proportion in 1861.

The diseases by which these admissions and deaths were caused are stated in Abstract No. XV. of Appendix, from which, and previous Reports, the following Table has been framed :—

Order.	Diseases.	1862.						1859-61.	
		Strength, 702.				Ratio per 1,000.		Ratio per 1,000.	
		Admissions.	Deaths.						
			In Jamaica.	Of Invalids.	Total.	Admitted.	Died.	Admitted.	Died.
	Class I.								
1	Miasmatic Diseases ..	162	4	..	4	230·8	5·70	367·3	7·01
2	Enthetic ,, ..	33	..	..	..	47·0	..	124·0	..
3	Dietic ,, ..	10	1	..	1	14·2	1·42	31·3	..
4	Parasitic ,, ..	3	..	..	..	4·3	..	3·2	..
	Class II.								
1	Diathetic Diseases	..	..	..	..	..	..	2·2	..
2	Tubercular ,, ..	7	1	1	2	10·0	2·85	3·8	1·62
	Class III. Diseases of the—								
1	Nervous System ..	7	1	..	1	10·0	1·42	17·3	1·62
2	Circulatory ,, ..	2	1	..	1	2·8	1·42	7·0	·54
3	Respiratory ,, ..	40	..	..	..	57·0	..	44·8	..
4	Digestive ,, ..	18	..	..	..	25·6	..	117·0	1·62
5	Urinary ,, ..	1	..	..	..	1·4	..	1·6	..
6	Reproductive ,, ..	1	..	..	..	1·4	..	1·6	..
7	Locomotive ,, ..	..	..	..	..	..	..	1·1	..
8	Integumentary ,, ..	76	..	..	..	108·3	..	141·3	..
	Class IV.								
4	Diseases of Nutrition ..	1	..	..	..	1·4	..	3·2	..
	Class V.								
1	Accidents	89	..	..	..	126·8	..	118·7	..
3	Homicide	..	..	..	..	..	..	..	·54
4	Suicide	..	..	..	..	..	..	·5	1·62
6	Corporal Punishment ..	2	..	..	..	2·8	..	3·8	..
	Diseases not specified ..	..	..	..	..	..	..	2·2	..
	Total	452	8	1	9	643·8	12·81	991·9	14·57

The admissions into hospital in 1862 have been one-third lower than the average of the three preceding years, the difference being chiefly in miasmatic and venereal diseases, and in those of the digestive and integumentary systems. The mortality also has been below the previous average.

Miasmatic Diseases have been 136 per 1,000 under the average. The following Table shows the prevalence of the various groups into which this class may be subdivided :—

Jamaica.

Diseases.	Admitted.	Died.	Ratio per 1,000 of Mean Strength.			
			1862.		1859-61.	
			Admitted.	Died.	Admitted.	Died.
Eruptive Fevers	1	..	1·4	..	..	..
Paroxysmal ,, ...	16	2	22·8	2·85	78·7	4·32
Continued ,, ...	43	2	61·2	2·85	79·3	2·16
Dysentery, Diarrhœa, &c. ..	25	..	35·6	..	44·8	·54
Sorethroat and Influenza ..	7	..	10·0	..	8·6	..
Ophthalmia	51	..	72·6	..	133·2	..
Rheumatism	16	..	22·8	..	16·7	..

It will be seen from this that the reduction in the admissions has been most marked in paroxysmal and continued fevers, and ophthalmia. The Royal Artillery quartered in Port Royal, who usually suffer considerably from paroxysmal fevers, were remarkably healthy throughout the year, and had only four admissions from this cause. In July eight cases of yellow fever were sent into the Royal Naval Hospital from Her Majesty's ship "Landrail," and six of them died; but the disease did not spread.

Ophthalmia was a source of considerable inefficiency, and although much less so than on the average of the three preceding years, the reduction in its amount, compared with 1861, was only 17 per 1,000.

Enthetic Diseases (venereal) have prevailed to only half the extent they did in 1861, and to little more than one third of the average of three years.

The reduction in diseases of the digestive and integumentary systems was noticed in the last Report; indeed, the admissions by "local diseases" so closely approximate the results of 1861, as to require no special remarks.

II. Black Troops.

In the beginning of the year the black troops in the island consisted of a company of Artillery, and the head-quarters and five companies of the 3rd West India Regiment. In July the 4th West India Regiment was raised, partly by volunteers and partly by recruiting, and in December two companies of the 3rd West India Regiment were detached to Barbadoes.

The average strength of the black troops during the year was 826. The admissions into hospital amounted to 852, and the deaths to 25, being respectively in the ratio of 1031 and 30·25 per 1,000 of the strength. Only two of the deaths occurred out of hospital, one by cholera in the Penitentiary at Kingston, and the other by suicide at Up Park Camp.

The following Table shows the admissions and deaths by the different classes of diseases. The details for 1862 will be found in Abstract No. XVII. of Appendix.

Jamaica.

Order.	Diseases.	1862.				1859-61.	
		Strength, 826.		Ratio per 1,000.		Ratio per 1,000	
		Admitted.	Died at Jamaica.	Admitted.	Died.	Admitted.	Died.
	Class I.						
1	Miasmatic Diseases.. ..	292	2	353·5	2·42	470·4	8·19
2	Enthetic ,, ...	247	1	299·0	1·21	278·6	·97
3	Dietic ,, ...	..	..	..	..	2·9	..
4	Parasitic ,, ...	2	..	2·4	..	1·4	..
	Class II.						
1	Diathetic Diseases	6	1	7·3	1·21	5·3	·97
2	Tubercular ,, ...	12	6	14·5	7·26	15·9	5·78
	Class III. Diseases of the—						
1	Nervous System ..	17	2	20·6	2·42	25·1	1·93
2	Circulatory ,, ...	2	2	2·4	2·42	1·4	..
3	Respiratory ,, ...	69	7	83·5	8·47	68·9	5·30
4	Digestive ,, ...	32	2	38·7	2·42	41·9	2·41
5	Urinary ,, ...	2	..	2·4	..	4·8	..
6	Reproductive ,, ...	10	..	12·1	..	7·2	..
7	Locomotive ,, ...	3	..	3·6	..	1·9	..
8	Integumentary ,, ...	98	..	118·6	..	118·6	·48
	Class IV.						
4	Diseases of Nutrition ..	1	..	1·2	..	..	..
	Class V.						
1	Accidents	58	1	70·2	1·21	55·9	·48
3	Homicide	..	..	..	..	·5	·48
4	Suicide	..	1	..	1·21	..	·48
5	Execution	..	..	..	..	..	·48
6	Corporal punishment ..	1	..	1·2	..	7·7	..
	Diseases not specified ..	..	..	..	..	5·3	..
	Total	852	25	1031·2	30·25	1113·7	27·95

The admissions into hospital have been below, and the deaths above the average of the three preceding years; the decrease has been chiefly in miasmatic, and the increased mortality by tubercular diseases.

Miasmatic Diseases, when subdivided into groups, give the following results:—

Disease	Admitted.	Died.	Annual Ratio per 1,000 of Mean Strength.			
			1862.		1859-61.	
			Admitted.	Died.	Admitted.	Died.
Eruptive Fevers	20	..	24·2	..	·5	..
Paroxysmal ,, ...	143	1	173·1	1·21	318·5	3·85
Continued ,, ...	9	..	10·9	..	27·0	2·41
Dysentery, Diarrhœa, and Cholera	15	1	18·2	1·21	26·0	1·45
Sorethroat and Influenza	24	..	29·0	..	14·0	..
Ophthalmia..	15	..	18·2	..	21·7	..
Rheumatism	66	..	79·9	..	57·8	·48

Eruptive Fevers furnished a high ratio of admissions, owing to the prevalence of measles as an epidemic at Up Park Camp, in the early part of the year. None of the cases terminated fatally.

Paroxysmal Fevers have been much below the average, both in admissions and deaths, and it is to this chiefly that the great reduction in miasmatic diseases has been due.

Jamaica.

Continued Fevers also have been much less prevalent than usual, but there has been a considerable increase in the cases of sorethroat and influenza, and in rheumatism.

Enthetic Diseases (venereal) show a slight increase, and have been six times as prevalent among the black as among the white troops.

Tubercular Diseases.—As in the Windward and Leeward Command, these diseases furnish a high ratio of mortality; indeed, combined with diseases of the respiratory system, they have given rise to upwards of half the deaths among the black troops. Whatever may be the cause of this liability to consumption, it would appear to be in force in Jamaica, as well as in the Windward and Leeward Command.

Corporal Punishment was only once inflicted during the year being in the proportion of 1·2 per 1,000 of the mean strength.

III. Bahamas.

Bahamas.

The head-quarters of the 2nd West India Regiment continued to garrison the Bahamas during 1862. In July 157 men were transferred from it to the 4th West India Regiment, which was then raised, but these men continued to serve at Nassau during the remainder of the year as a detachment of the latter corps.

The average strength of the troops during the year was 439, the admissions into hospital were 404, and the deaths amounted to 13. The sickness, therefore, was in the ratio of 920, and the mortality of 27·31 per 1,000 of the strength. The diseases will be found detailed in Abstract No. XVII. of Appendix, from which, and previous Reports, the following Table has been prepared:—

Order.	Black Troops.	1862.				1859-61.	
		Strength, 439.		Annual Ratio per 1,000.		Annual Ratio per 1,000.	
	Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
	Class I.						
1	Miasmatic Diseases ..	194	2	441·9	4·55	364·2	5·97
2	Enthetic " ..	95	1	216·4	2·28	152·2	..
3	Dietic " ..	..	..	..	..	4·0	..
4	Parasitic " ..	..	..	..	..	7·0	..
	Class II.						
1	Diathetic Diseases ..	2	..	4·5	..	4·0	·99
2	Tubercular " ..	10	4	22·8	9·10	16·9	10·94
	Class III. Diseases of the—						
1	Nervous System ..	6	..	13·7	..	16·9	2·99
2	Circulatory " ..	1	..	2·3	..	2·0	..
3	Respiratory " ..	23	4	52·4	9·10	55·7	4·98
4	Digestive " ..	6	1	13·7	2·28	16·9	1·99
5	Urinary " ..	2	..	4·5	..	1·0	..
6	Reproductive " ..	11	..	25·1	..	15·9	..
7	Locomotive " ..	..	..	..	..	1·0	..
8	Integumentary " ..	36	1	82·0	..	69·6	..
	Class IV.						
4	Diseases of Nutrition ..	..	..	..	..	3·0	..
	Class V.						
1	Accidents	17	..	38·7	..	64·7	..
4	Suicide	..	..	..	..	1·0	·99
6	Corporal punishment ..	1	..	2·3	..	2·0	..
	Diseases not specified ..	..	..	..	..	8·0	..
	Total	404	13	920·3	27·31	806·0	28·85

Bahamas.

The admissions have been considerably above the average, the excess being chiefly in miasmatic and enthetic diseases.

Yellow fever prevailed among the civil population and shipping at Nassau from the end of July till the beginning of November, but only one case, which terminated fatally, occurred among the black troops. Two of the officers of the 4th West India Regiment, however, fell victims to the disease. During the period of this epidemic, intermittent and remittent fevers were exceedingly prevalent among the troops.

The increase of venereal has been attributed by the Medical Officers to the spread of the disease by the sailors of the numerous vessels which during the year frequented the harbour of Nassau.

The ratio of mortality corresponds closely with the average of the three preceding years; it is, however, extremely high, amounting to nearly 3 per cent. The chief causes have been, as in the Windward and Leeward Command and Jamaica, tubercular diseases and those of the respiratory system.

IV. HONDURAS.

Honduras.

The average strength of white non-commissioned officers employed at Honduras was only five, and no casualty occurred among them.

The average strength of the black troops, consisting of a detachment of the 3rd West India Regiment and a few Artillerymen, was 305; the admissions into hospital were 378, and the deaths 5, of which 2 were out of hospital. The admissions, therefore, were in the ratio of 1239, and the deaths of 16·30 per 1,000 of the strength—the former being considerably under, and the latter almost identical with the proportion in 1861.

The following Table shows the influence of the different classes of diseases upon these troops. The details will be found in Abstract No. XVII. of Appendix.

Order.	Black Troops.	1862.				1859-61.	
		Strength, 305.		Annual Ratio per 1,000.		Annual Ratio per 1,000.	
	Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
	Class I.						
1	Miasmatic Diseases ..	161	..	527·9	..	577·9	4·69
2	Enthetic ,, ..	29	..	95·1	..	98·5	..
3	Dietic ,, ..	1	..	3·3	..	2·8	2·82
4	Parasitic ,, ..	..	..	..	..	15·0	..
	Class II. ..						
1	Diathetic Diseases ..	2	..	6·5	..	6·6	..
2	Tubercular ,, ..	..	1	..	3·26	6·6	1·87
	Class III.						
	Diseases of the—						
1	Nervous System ..	10	..	32·6	..	14·1	1·87
2	Circulatory ,, ..	..	..	..	..	4·7	3·75
3	Respiratory ,, ..	20	..	65·3	..	64·7	·94
4	Digestive ,, ..	22	1	72·1	3·26	41·3	..
5	Urinary ,, ..	..	..	..	..	3·7	..
6	Reproductive ,, ..	11	..	36·1	..	9·4	..
7	Locomotive ,, ..	..	..	..	..	4·7	..
8	Integumentary ,, ..	80	..	262·3	..	180·1	·94
	Class IV.						
4	Diseases of Nutrition..	2	..	6·5	..	..	..
	Class V.						
1	Accidents	40	1	131·2	3·26	98·5	·94
3	Homicide	..	1	..	3·26	..	..
4	Suicide	..	1	..	3·26	..	..
6	Corporal punishment..	..	..	..	..	11·2	..
	Diseases not specified..	..	..	..	..	2·8	·94
	Total ..	378	5	1238·9	16·30	1142·6	18·76

Honduras.

Although the admissions have been considerably above the average of the three preceding years, those by miasmatic diseases have been below it. They still, however, have been the cause of upwards of two-fifths of the whole sickness. Of 161 admissions by this class, 126 were caused by intermittent fever. Diseases of the integumentary system were much above the average, the excess arising chiefly from the prevalence of ulcers and boils.

Three of the deaths were the result of violence, one by fracture of spine from a fall, one by murder, and one by suicide. There were therefore only two deaths from disease, one from consumption, and the other from inflammation of the bowels.

Section II.

On the extent of Invaliding.

The number of men sent home recommended for discharge was 11 from the Windward and Leeward Command, and 25 from Jamaica; and for change of climate 3 and 2. The following Table, compiled from Abstract No. XVI. of Appendix, shows the classes of diseases which occasioned this invaliding:—

White Troops	Windward and Leeward Command. Mean Strength, 1,222.		Jamaica. Mean Strength, 702.	
	Recommended for—		Recommended for—	
Diseases.	Discharge.	Change of Climate.	Discharge.	Change of Climate.
Miasmatic Diseases	..	20	..	1
Enthetic ,, ...	..	..	1	..
Diathetic ,, ...	..	1	..	..
Tubercular ,, ...	2	..	1	..
Diseases of the—				
Nervous System	4	..	1	..
Circulatory ,, ...	3	1	..	..
Respiratory ,, ...	..	1	..	..
Digestive ,, ...	1	1	..	..
Reproductive ,, ...	1	..	..	..
Integumentary ,, ...	..	1	..	1
Total	11	25	3	2
Ratio per 1,000 of Strength 1862	9·0	20·5	4·3	2·8
Ratio per 1,000 of Strength 1861	17·5	25·4	1·6	9·4

The proportion sent home as invalids was lower from both Commands than in the preceding year. The chief cause of disability in the Windward and Leeward Command was ophthalmia, on account of which 16 men were sent home for change of climate.

The number finally discharged the service of invalids from these Commands was 37, of whom ten were from Jamaica, and 27 from the Windward and Leeward Command. The disabilities for which they were discharged are classed in the following Table:

West Indies.

White Troops	Windward and Leeward Command.	Jamaica.
Diseases.	Discharged as Invalids.	Discharged as Invalids.
Eye Diseases	12	2
Rheumatism and Chronic Pains	3	..
Venereal	..	1
Cachexies and Scrofula	1	..
Weakly Constitution and Debility	1	1
Mental Diseases	2	..
Paralysis	..	1
Epilepsy	1	..
Cardiac Disease	2	1
Pulmonary „	5	..
Hernia	..	1
Dropsy and Visceral Disease	..	1
Dislocations, Fractures, &c.	..	2
Total	27	10
Ratio per 1,000 of Mean Strength 1862 ..	22·1	14·2
Ratio per 1,000 of Mean Strength 1859–61 ..	8·0	6·5

The number finally discharged has been considerably in excess of the average of the three preceding years. The only disability which bears a very marked prominence is ophthalmia.

The average strength of the black troops serving in the West Indies, and in Western Africa, was 3,573; and the number of men discharged from them as invalids was 121, being in the ratio of 33·9 per 1,000 of the strength. The following Table shows the classes of diseases which gave rise to these disabilities:

Black Troops	West Indies and Western Africa.	
	1862.	1860–61.
Strength	3,573	7,014.
Diseases.	Discharged as Invalids.	Discharged as Invalids.
Ophthalmia	5	5
Rheumatism	36	42
Venereal	7	4
Tumour	..	2
Dropsy	1	..
Tubercular Diseases	11	18
Diseases of the—		
Nervous System	18	12
Circulatory „	3	1
Respiratory „	4	7
Digestive „	10	4
Urinary „	1	..
Reproductive „	2	..
Locomotive „	..	2
Integumentary „	11	8
Diseases of Nutrition	1	..
Accidents and Violence	10	6
Not specified	1	1
Total	121	112
Ratio per 1,000 of Mean Strength	33·9	16·0

West Indies. As the invalids of the black troops are usually sent to the head-quarters of their corps to be discharged, and as detachments of the West India Regiments are scattered over the various stations in the West Indies and Western Africa, it seems advisable to amalgamate the invalid returns of the several black corps, rather than to state the numbers discharged at each station separately.

The invaliding in 1862 has been double the average of the two preceding years. The increase has not been confined to any class of diseases, but has been less marked in tubercular and pulmonary diseases than in most of the others.

Section III.

Mean Daily Sick.

The mean daily sick of the white troops throughout the year amounted to 49 in the Windward and Leeward Command, and 19 in Jamaica, and of the black troops to 36 in the former, 37 in the latter, 27 in the Bahamas, and 10 in Honduras. Calculations based on these numbers give the following results for 1862 :—

		White Troops.		Black Troops.			
		Windward and Leeward Command.	Jamaica.	Windward and Leeward Command.	Jamaica.	Bahamas.	Honduras.
Ratio per 1,000 constantly Sick.	1862 ..	40·10	27·07	30·93	44·79	61·50	32·79
	1859–61*..	40·49	37·22	39·64	59·28	47·24	43·78
		days.	days.	days.	days.	days.	days.
Mean Sick Time to each Soldier.	1862 ..	14·64	9·88	11·29	16·35	22·45	11·97
	1859–61*..	14·78	13·58	14·47	21·64	17·24	15·98
Average Duration of the Cases.	1862 ..	12·47	15·34	14·02	15·85	24·39	9·66
	1859–61*..	13·53	13·69	15·20	19·43	19·33	10·49

There has been a decrease in the mean daily sick, both of white and black troops, at all the stations except the Bahamas, where there has been a marked increase, attributable, doubtless, to the unhealthy state of Nassau during the autumnal months. The mean sick time to each soldier is also under the previous average, but the mean duration of the cases under treatment has been longer than formerly among the white troops in Jamaica, which would lead to the inference that the marked reduction in the mean sick has taken place chiefly in the slighter cases, which require little medical treatment.

Section IV.

Influence of Age on the Mortality.

The numbers living, and the deaths at each age, in quinquennial periods, are stated in Abstract No. XVIII. of Appendix, from which, and previous Reports, the following Table has been prepared :—

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* The ratios for Bahamas and Honduras are those of 1861 only.

West Indies.

		Under 20 Years.	20–24	25–29	30–34	35–39	40 and Upwards.
White Troops— Ratio of Deaths per 1,000 of Strength.	1862 ..	..	6·09	10·34	8·73	46·01	..
	1861 ..	..	2·92	6·27	10·58	..	..
Black Troops— Ratio of Deaths per 1,000 of Mean Strength.	1862 ..	17·74	25·08	21·91	16·81	21·05	31·25
	1859-61	14·03	24·66	21·23	31·25	19·74	19·61

The numbers of the white troops under observation have been too few to justify any deductions from these results. The irregularity in the ratios of the black troops seems also to point to the necessity for more extensive data from which to obtain a reliable average.

V.—ON THE HEALTH OF THE TROOPS SERVING IN WESTERN AFRICA.

Western Africa.

The troops employed in this Command consisted of a detachment of the 2nd West India Regiment, and the Gold Coast Artillery Corps. In the end of December 1861, a detachment of the 2nd West India Regiment was sent from the Gambia to the Island of Lagos, at the mouth of the Krader Water, about 500 miles from Cape Coast Castle, and continued to occupy it during 1862. No death occurred among the European non-commissioned officers at any of the stations.

The following Table shows the strength of the black troops at Sierra Leone, the Gambia, Lagos, and the Gold Coast, with the admissions into hospital, and deaths:—

	Average Strength.	Admissions into Hospital.	Deaths	Ratio per 1,000 of Strength.		1859–61. Ratio per 1,000.	
				Admitted	Died.	Admitted	Died.
Sierra Leone ..	317	252	9	794·9	28·36	724·9	29·86
The Gambia ..	209	254	4	1215·2	19·13	933·3	36·53
Lagos ..	105	198	3	1885·7	28·57		
The Gold Coast ..	313	144	9	460·0	28·74	681·2	25·64

The admissions into hospital at Sierra Leone, though somewhat above the average, have been greatly below the numbers in 1861. At the Gambia there has been a great increase in the admissions, but a decrease, to the extent of one half, in the deaths; and on the Gold Coast the admissions have been much under the average, while the deaths have been above it and greatly in excess of those in 1861.

At Lagos, which was occupied for the first time as a military post, the admissions were extremely high, amounting to twice the average proportion at the Gambia, but the deaths corresponded closely with the ratio at Sierra Leone and on the Gold Coast.

During the month of January the troops at Sierra Leone, who had taken the field in the end of November against the King and chiefs of Quiat, continued on active service, and to this circumstance the Medical Officers attribute the excess in the admissions.

The following Table shows the influence of the different classes of diseases upon the troops. The details for 1862 will be found in Abstract No. XIX. of Appendix.

Orders.	Stations	Sierra Leone.						Gambia.						Lagos.				Gold Coast.					
	Strength	317.						209.						105.				313.					
				1862.		1859–61.				1862.		1859–61.				1862.				1862.		1859–61.	
	Diseases.	Admitted.	Died.	Annual Ratio per 1,000.		Annual Ratio per 1,000.		Admitted.	Died.	Annual Ratio per 1,000.		Annual Ratio per 1,000.		Admitted.	Died.	Annual Ratio per 1,000.		Admitted.	Died.	Annual Ratio per 1,000.		Annual Ratio per 1,000.	
				Admitted.	Died.	Admitted.	Died.			Admitted.	Died.	Admitted.	Died.			Admitted.	Died.			Admitted.	Died.	Admitted.	Died.
	Class I.																						
1	Miasmatic Diseases	54	..	170·3	..	243·4	6·33	116	1	555·0	4·78	440·2	4·57	88	3	838·1	28·57	12	1	38·3	3·19	124 9	5·57
2	Enthetic ,, ..	41	..	129·3	..	145·7	..	33	..	157·9	..	151·6	1·83	61	..	581·0	..	11	..	35·1	..	43·5	..
3	Dietic ,, ..	1	1	3·2	3·15	·9	..	..	..	..	..	3·7	..	5	..	47·6	..	..	..	..	..	2·2	..
4	Parasitic ,, ..	13	..	41·0	..	12·7	..	4	..	19·1	..	12·8	..	..	..	..	..	35	..	111·8	..	262·0	..
	Class II.																						
1	Diathetic Diseases ..	1	..	3·2	..	4·5	..	3	..	14·3	..	8·2	2·74	..	..	..	..	..	..	..	..	1·1	..
2	Tubercular ,, ..	10	4	31·5	12·60	11·8	6·33	2	3	9·6	14·35	14·6	8·22	..	..	..	..	2	2	6·4	6·39	4·5	2·23
	Class III. Diseases of the—																						
1	Nervous System ..	2	1	6·3	3·15	16·3	4·53	6	..	28·7	..	12·8	1 83	1	..	9·5	..	3	..	9·6	..	12·3	4·46
2	Circulatory ,, ..	..	..	..	..	1·8	..	..	..	..	..	2·7	1 83	..	..	..	..	..	1	..	3·19	..	..
3	Respiratory ,, ..	20	3	63·1	9·46	67·9	3·62	17	..	81·3	..	96·8	10·05	2	..	19·1	..	9	3	28·7	9·58	29·0	2·23
4	Digestive ,, ..	7	..	22·1	..	27·1	5·43	11	..	52 6	..	22 8	·91	1	..	9·5	..	..	..	..	..	32·3	3·34
5	Urinary ,, ..	..	..	..	..	1·8	..	3	..	14·3	..	1·8	·91	..	..	..	..	..	..	..	..	4·5	..
6	Reproductive ,, ..	7	..	22·1	..	·9	..	2	..	9·6	..	1·8	..	4	..	38·1	..	4	..	12·8	..	3·3	..
7	Locomotive ,, ..	3	..	9·5	..	13·6	·90	1	..	4·8	..	9·1	·91	..	..	..	..	4	..	12·8	..	12·3	..
8	Integumentary ,, ..	61	..	192·4	..	104·1	..	34	..	162·7	..	83·1	..	22	..	209·5	..	40	..	127·8	..	89·2	..
	Class IV.																						
4	Diseases of Nutrition	..	..	..	..	·9	..	..	..	..	..	1·8	..	..	..	..	..	..	..	..	..	..	..
	Class V.																						
1	Accidents	23	..	72·5	..	50·7	..	22	..	105 3	..	47·5	..	9	..	85·7	..	19	..	60·7	..	54·6	6·69
2	Battle	7	..	22·1	..	12·7	2·72	..	..	..	..	10·1	..	..	..	..	..	..	..	..	..	..	..
3	Homicide	..	..	..	..	..	..	..	..	..	..	·9	·91	..	..	..	..	..	..	..	..	..	..
4	Suicide	..	..	..	..	..	..	..	..	..	..	..	·91	..	..	..	..	..	..	..	..	..	1·12
5	Execution	..	..	..	..	..	..	..	..	..	..	..	·91	..	..	..	..	..	2	..	6·39	..	..
6	Corporal Punishment	2	..	6·3	..	5·4	..	..	..	..	..	5·5	..	5	..	47·6	..	5	..	16·0	..	2·2	..
	Diseases not specified	..	..	..	..	2·7	..	..	..	..	..	5·5	..	..	..	..	..	..	..	..	..	3·3	..
	Total	252	9	794·9	28·36	724·9	29·86	254	4	1215·2	19·13	933·3	36·53	198	3	1885·7	28·57	144	9	460·0	28·74	681·2	25·64

Western Africa.

Western Africa.

Miasmatic Diseases have been much less prevalent than formerly, at Sierra Leone and on the Gold Coast, but have been in excess of the average at the Gambia, though less than in 1861. On subdividing them into the usual groups, the following are the results :—

Diseases.	Sierra Leone.			The Gambia.			Lagos.		The Gold Coast.		
	Admitted in 1862.	Ratio per 1,000 Admitted. 1862.	Ratio per 1,000 Admitted. 1859-61.	Admitted in 1862.	Ratio per 1,000 Admitted. 1862.	Ratio per 1,000 Admitted. 1859-61.	Admitted in 1862.	Ratio per 1,000 Admitted.	Admitted in 1862.	Ratio per 1,000 Admitted. 1862.	Ratio per 1,000 Admitted. 1859-61.
Eruptive Fevers	1	3·1	29·0	..	..	52·0	..	..	..	..	7·8
Paroxysmal „	23	72·6	105·9	60	287·1	295·0	46	438·1	1	3·2	13·3
Continued „	..	..	3·6	..	..	10·0	..	..	..	..	2·2
Dysentery & Diarrhœa ..	10	31·5	17·2	39	186·6	33·8	28	266·6	5	16·0	36·8
Sorethroat & Influenza ..	..	..	5·4	1	4·8	9·1	..	..	..	..	1·1
Ophthalmia ..	2	6·3	12·7	3	14·3	12·8	..	..	1	3·2	24·5
Rheumatism ..	18	56·8	56·1	13	62·2	21·0	14	133·3	4	12·8	30·1

There has been almost an entire absence of *Eruptive Fevers* among the troops in 1862, one case of chicken-pox having been the only admission by that class. *Paroxysmal Fevers* were less prevalent than formerly, and there were no admissions by those of the continued type.

Dysentery and *Diarrhœa* were greatly in excess of the average, especially at the Gambia and on the Gold Coast, a result attributed by the Medical Officers to the extreme wetness of the season.

At Lagos miasmatic diseases were the cause of nearly half the admissions into hospital. The proportion of cases of paroxysmal fevers, and of dysentery and diarrhœa, was very greatly in excess even of the Gambia. The prevalence of these diseases is not surprising, considering the situation of the Island of Lagos, and the total absence of anything approaching to sanitary arrangements in the native town, where the troops are quartered.*

Venereal has also been extremely prevalent at Lagos.

Parasitic Diseases.—The admissions by this class have been very high in Sierra Leone, from the occurrence of a number of cases of itch, and on the Gold Coast from Guinea-worm. The admissions by the latter disease have been much fewer than formerly, but still amount to one-fourth of the whole at that station. Four cases of it were recorded at Lagos.

Tubercular Diseases.—The stations in Western Africa, with the exception of Lagos, show the same great liability to, and high rate of mortality from, consumption and diseases of the lungs, among the black troops, to which attention has been already called in the Report on the West Indies. The deaths from these two groups have amounted, on the average of four years—1859-62—to 12·66 per 1,000 at Sierra Leone, 17·64 per 1,000 at the Gambia, and 7·44 per 1,000 on the Gold Coast. The exciting causes of diseases producing so high a rate of mortality appear to deserve careful investigation.

Accidents, Violence, &c.—Seven cases of gunshot wounds received in action were admitted into hospital at Sierra Leone, all of which recovered. In one case amputation of the arm was necessary.

Two of the deaths by violence in the Gold Coast Corps were those of mutineers shot by sentence of a General Court-Martial. The ratio of corporal punishment was very high at Lagos, probably because, under the peculiar circumstances of the station, there were no means of inflicting other secondary punishments.

The invalids from the West Coast of Africa have already been noticed in the Report on the troops in the West Indies.

The mean daily sick amounted to 14 in Sierra Leone, 8·5 at the Gambia, 9 at Lagos, and 7 on the Gold Coast. These numbers give the following results :—

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* A description of this station will be found at page 262 of this volume, in the Report by the Head of the Sanitary Branch.

Western Africa.

	Sierra Leone.	The Gambia.	Lagos.	The Gold Coast.
Ratio per 1,000 of strength constantly sick	44 ·16	40 ·67	85 ·71	22 ·68
	Days.	Days.	Days.	Days.
Average sick time to each soldier	16 ·12	14 ·84	31 ·28	8 ·28
Average duration of cases of sickness	20 ·28	12 ·21	16 ·59	18 ·00

There has been an increase upon the ratio of the preceding year in all these particulars, except on the Gold Coast, where the mean daily sick and the average sick time to each soldier have been lower, but the duration of the cases there also has been higher. The very high ratio of inefficiency from sickness at Lagos seems to indicate strongly the necessity for adopting measures to improve the sanitary condition of that station. It will be observed that although the sick time to each soldier there has been greatly in excess of the other stations, the average duration of the cases of sickness has been lower than at Sierra Leone or the Gold Coast.

VI.—ON THE HEALTH OF THE TROOPS SERVING IN THE ISLAND OF ST. HELENA.

St. Helena.

The average strength of the troops, consisting of Royal Artillery, Royal Engineers, and the St. Helena Regiment, was 697; the admissions into hospital were 564, and the deaths 7, of which 4 occurred out of hospital. These numbers give the ratio of 809 admissions, and 10·03 deaths, per 1,000 of mean strength, being lower than in the preceding year.

The following Table shows the admissions and deaths by each class of diseases, compared with the results for the three preceding years. The details for 1862 are given in Abstract No. XX. of Appendix.

Order.	Diseases.	Strength, 697.		Ratio per 1,000 of Strength.			
				1862.		1859-61.	
		Admitted	Died.	Admitted	Died.	Admitted	Died.
	Class I.						
1	Miasmatic Diseases ..	198	1	284 ·1	1 ·43	386 ·7	3 ·12
2	Enthetic ,, ..	80	..	114 ·8	..	88 ·4	..
3	Dietic ,, ..	37	..	53 ·1	..	38 ·0	·62
4	Parasitic ,, ..	2	..	2 ·9	..	2 ·5	..
	Class II.						
1	Diathetic Diseases ..	7	..	10 ·0	..	3 ·1	·62
2	Tubercular ,, ...	..	2	..	2 ·87	5 ·0	1 ·25
	Class III. Diseases of the—						
1	Nervous System ..	19	1	27 ·3	1 ·43	27 ·4	2 ·49
2	Circulatory ,, ..	4	..	5 ·7	..	9 ·3	·62
3	Respiratory ,, ..	34	1	48 ·8	1 ·43	46 ·7	·62
4	Digestive ,, ..	38	..	54 ·5	..	55 ·4	·62
5	Urinary ,, ..	4	..	5 ·7	..	3 ·1	..
6	Reproductive ,, ..	..	..	..	..	5 ·0	..
7	Locomotive ,, ..	2	..	2 ·9	..	1 ·3	..
8	Integumentary ,, ..	32	..	45 ·9	..	91 ·5	..
	Class V.						
1	Accidents	106	2	152 ·1	2 ·87	139 ·5	1 ·87
6	Corporal Punishment ..	1	..	1 ·4	..	·6	..
	Diseases not specified ..	..	..	..	..	7 ·5	..
	Total	564	7	809 ·2	10 ·03	911 ·0	11 ·83

St. Helena.

Miasmatic diseases, and those of the integumentary system, have been much less prevalent than formerly, but there has been an increase in venereal and dietic diseases, and in accidents and injuries.

Miasmatic Diseases, when subdivided into groups, give the following results :—

Diseases.	Admitted	Died.	Ratio per 1,000 of Mean Strength. 1862. Admitted	1862. Died.	1859–61. Admitted	1859–61. Died.
Eruptive Fevers	..	..	..	..	..	..
Paroxysmal "	47	..	67·4	..	16·8	·62
Continued "	33	1	47·3	1·43	156·9	1·87
Dysentery and Diarrhœa ..	51	..	73·2	..	117·1	·62
Sorethroat and Influenza ..	5	..	7·2	..	15·6	..
Ophthalmia	21	..	30·1	..	26·1	..
Rheumatism	14	..	20·1	..	29·3	..

The reduction in the prevalence of miasmatic diseases has chiefly shown itself in continued fevers, and in dysentery and diarrhœa. Paroxysmal fevers have been greatly in excess of the average, but were all of the remittent type, and do not appear to have been the result of marshy emanations. Combining the remittent and continued fevers, as having probably the same exciting causes in this island, there has been a reduction in their prevalence to the extent of 53 per 1,000 of the strength. This improvement, and the diminution also of diarrhœa, are attributed by the Medical Officers to the establishment of a camp at Deadwood, to which each company is sent in turn for three months. The immediate neighbourhood of the barracks in James' Town is described as being in as filthy and insanitary condition as can possibly be imagined. The frequent change of the men from these barracks to Ladder Hill and the camp appears to have been attended with most beneficial effects, both in the reduction of the number of fever cases, and a change in their character—the typhoid type, which was formerly prevalent, having almost entirely disappeared.

Dietic Diseases.—The admissions under the head of intemperance, though still very high, have been lower than in 1861. The facilities for obtaining spirits, and the frequent visits of the ships of the West Coast of Africa fleet, the blue jackets of which have usually large sums accumulated with which they are only too willing to treat the soldiers, sufficiently explain the large number of cases under this class.

Twelve men were sent to England as invalids during the year, of whom six were recommended for discharge from the service, and six for change of climate. One man was finally discharged the service at Fort Pitt for ophthalmia. The diseases for which the men were invalided were as follows :—

Diseases.	Recommended for— Discharge.	Recommended for— Change of Climate.	Discharged the Service as an Invalid.
Ophthalmia	..	2	1
Diarrhœa	..	1	..
Rheumatism	..	1	..
Secondary Syphilis	1	..	..
Mental Disease	3	..	..
Disease of Heart	1	..	..
Pleurisy	..	1	..
Dyspepsia	..	1	..
Fracture	1	..	..
Total	6	6	1
Ratio per 1,000 of Strength	8·60	8·60	1·43

St. Helena.

The mean daily sick during the year was 23, or in the ratio of 33 per 1,000 of the strength. The average sick time to each soldier was 12·04 days, and the average duration of the cases in hospital 14·88 days.

The following Table shows the ages of the men serving, and the deaths at each age, in quinquennial periods :—

	Under 20.		20–24.		25–29.		30–34.		35–39.		40 and upwards.	
	Strength on 1st April.	Died during Year.	Strength on 1st April.	Died during Year.	Strength on 1st April.	Died during Year.	Strength on 1st April.	Died during Year.	Strength on 1st April.	Died during Year.	Strength on 1st April.	Died during Year.
Troops.. ..	28	..	250	1	249	3	107	3	26	..	3	..
Ratio per 1,000.	..	..	..	4·00	..	12·05	..	28·04	..	..	..	..

The numbers under observation are too small to justify any deductions from these results.

VII.—ON THE HEALTH OF THE TROOPS SERVING AT THE CAPE OF GOOD HOPE.

Section I.

Sickness and Mortality.

Cape of Good Hope.

No change took place in the troops serving at the Cape of Good Hope during the year. The average strength was 4,519 non-commissioned officers and men, among whom there were 3,906 admissions into hospital, 32 deaths in, and 8 out of hospital, and 4 of invalids, making the total mortality 44. These numbers give the ratio of 864 admissions, and 9·73 deaths, per 1,000 of the strength.

The following Table shows the relative proportion of admissions and deaths from each corps :—

	Average Annual Strength.	Admissions into Hospital.	Deaths.				Annual ratio per 1,000 of Mean Strength.	
			In Hospital.	Out of Hospital.	Of Invalids.	Total.	Admitted.	Died.
Royal Artillery	155	135	2	1	..	3	871	19·35
Royal Engineers ..	221	130	2	..	..	2	588	9·05
2nd Bat. 10th Regiment.	850	471	5	2	..	7	554	8·23
" 11th "	856	1,241	5	..	1	6	1,450	7·01
" 13th "	848	558	4	2	1	7	658	8·25
85th Regiment	760	669	3	2	2	7	880	9·21
Cape Mounted Rifles ..	810	676	10	1	..	11	834	13·58

The other death was that of a Serjeant of the Army Hospital Corps.

The admissions into hospital were extremely high in the 11th Regiment, chiefly from the number of cases of venereal, which amounted to 499, or 583 per 1,000 of the strength. Continued fevers and diarrhœa were also very prevalent in the corps, and attributed by the Surgeon to the defective sanitary condition of Cape Town, where the regiment was quartered.

The following Table shows the classes of diseases by which the sickness and mortality were caused. The details for 1862 will be found in Abstract No. XX. of Appendix.

Cape of Good Hope.

Order.	Diseases.	1862.						1859–61.*	
		Mean Strength, 4,519.						Ratio per 1,000 of Mean Strength.	
		Admitted.	Deaths.			Ratio per 1,000			
			At Cape.	Of Invalids.	Total.	Admitted.	Died.	Admitted.	Died.
	Class I.								
1	Miasmatic Diseases ..	1,310	9	..	9	289 ·9	1 ·99	280 ·5	2 ·24
2	Enthetic " ..	1,016	..	..	..	224 ·8	..	166 ·8	·08
3	Dietic " ..	73	3	..	3	16 ·2	·66	8 ·9	·48
4	Parasitic " ..	29	..	..	..	6 ·4	..	17 ·5	..
	Class II.								
1	Diathetic Diseases ..	7	1	..	1	1 ·6	·22	3 ·4	·08
2	Tubercular " ..	21	..	2	2	4 ·7	·44	9 ·8	1 ·44
	Class III.. Diseases of the—								
1	Nervous System ..	90	3	2	5	19 ·9	1 ·11	26 ·0	1 ·44
2	Circulatory " ..	64	10	..	10	14 ·2	2 ·22	25 ·4	1 ·36
3	Respiratory " ..	151	4	..	4	33 ·4	·88	65 ·7	·96
4	Digestive " ..	225	2	..	2	49 ·8	·44	45 ·5	1 ·12
5	Urinary " ..	10	1	..	1	2 ·2	·22	1 ·9	·16
6	Reproductive " ..	54	..	..	..	11 ·9	..	8 ·4	..
7	Locomotive " ..	20	..	..	..	4 ·4	..	4 ·6	..
8	Integumentary " ..	447	..	..	..	98 ·9	..	104 ·4	..
	Class IV.								
4	Diseases of Nutrition ..	1	..	..	..	·2	..	·8	..
	Class V.								
1	Accidents	375	6	..	6	83 ·0	1 ·33	89 ·4	1 ·60
3	Homicide	..	..	..	..	..	..	..	·08
4	Suicide	1	..	..	..	·2	..	·1	·24
5	Execution	..	1	..	1	..	·22	..	..
6	Corporal Punishment ..	12	..	..	..	2 ·6	..	4 ·1	..
	Diseases not specified ..	..	..	..	..	..	..	13 ·0	..
	Total	3,906	40	4	44	864 ·3	9 ·73	876 ·2	11 ·28

These results show a marked increase in the admissions by venereal (enthetic diseases), and a considerable reduction in diseases of the circulatory and respiratory systems.

Miasmatic Diseases have been slightly in excess of the average. When subdivided, they furnish the following results :—

Diseases.	Admitted	Died.	Annual Ratio per 1,000 of Strength.			
			1862.		1859–61.	
			Admitted	Died.	Admitted	Died.
Eruptive Fevers	2	..	0 ·4	..	2 ·8	·08
Paroxysmal "	23	..	5 ·1	..	10 ·0	..
Continued "	211	5	46 ·7	1 ·11	49 ·8	1 ·20
Dysentery, Diarrhœa, and Cholera	195	4	43 ·1	·88	45 ·2	·96
Sorethroat and Influenza ..	116	..	25 ·7	..	17 ·9	..
Ophthalmia	550	..	121 ·7	..	79 ·8	..
Rheumatism	178	..	39 ·4	..	41 ·5	..

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* The 59th Regiment in 1859 has been omitted in preparing this Table, for reasons which were fully detailed in the Report for that year

Cape of Good Hope.

Although the admissions by ophthalmia have been greatly in excess of the average, they have differed little from the amount in 1861. It prevailed to a great extent in the 13th, 85th, and Cape Mounted Rifles; the 10th, which suffered so much from it in 1861, had only 87 cases. The Royal Artillery and Engineers and the 13th Regiment were nearly free from it. No special cause has been assigned for its prevalence in the above-mentioned corps.

Dietic Diseases have furnished nearly double the average proportion of admissions. Three cases of scurvy were reported. There were 23 admissions by *delirium tremens*, and 70 by intemperance (*ebriositas*), so that the admissions directly resulting from this vice amounted to 20·6 per 1,000 of the strength.

Diseases of the Circulatory System have been much less prevalent, though more fatal than formerly, but it may be a question whether this reduction has not been to a great extent due to the number of men invalided for diseases of this class in 1861 and 1862.

Violent Deaths.—Among these is included that of a Private of the 10th Regiment, who was hanged by sentence of the civil court at Graham's Town, for rape.

Corporal Punishment was inflicted in little more than half the proportion of the three preceding years.

Section II.

On the Extent of Invaliding.

There were 67 invalids sent home recommended for discharge, and 48 for change of climate, being in the ratio of 12·6 and 10·6 per 1,000 of the mean strength. The causes of invaliding are shown in the following Table, condensed from Abstract No. XXI. of Appendix :—

Diseases.	Number sent Home.	
	Recommended for Discharge.	For Change of Climate.
Intermittent Fever	..	1
Ophthalmia	5	3
Dysentery	2	2
Rheumatism	8	4
Venereal	..	9
Tubercular Diseases	4	1
Diseases of the—		
Nervous System	10	1
Circulatory ,, ...	7	18
Respiratory ,, ...	6	4
Digestive ,, ...	5	1
Locomotive ,, ...	1	..
Integumentary ,, ...	..	1
Diseases of Nutrition..	2	2
Accidents and Violence	2	1
Worn Out	15	..
Total	67	48
Ratio per 1,000 of Mean Strength	14·8	10 6

The proportion is rather lower in both classes than in 1861, but the chief causes of disability remain the same, with the exception that 15 men were sent home in 1862, under the head of "worn out." In both years the number

Cape of Good Hope.

invalided for diseases of the circulatory system was very high—26 and 25—a circumstance which, it has been already stated, may probably account for the reduction in the admissions into hospital by this class.

During the year, 73 men who had been invalided from the Cape were finally discharged the service, being in the ratio of 16·2 per 1,000 of mean strength, or almost identical with the average of previous periods. The disabilities for which these men were discharged are shown in the following Table :—

Eye Diseases	13
Rheumatism	13
Venereal	2
Cachexy and Scrofula	4
Pulmonary Disease	8
Weakly Constitution and Debility	3
Mental Disease	4
Epilepsy	2
Cardiac Disease	14
Dysentery and Hepatic Disease	1
Hernia..	3
Dropsy and Visceral Disease..	1
Stricture and Urinary Diseases	1
Ulcers and Varices	1
Contractions	2
Dislocations and Fractures	1
	73

Ocular and cardiac diseases, with rheumatism, have been the causes assigned for upwards of half, and scrofula and pulmonary disease for one-sixth of the discharges during the year.

Section III.

On the Mean Daily Sick.

The average number constantly sick during the year was 202, or 44·7 per 1,000 of the strength, being almost identical with the ratio of the preceding year. The following Table gives the usual deductions on this head :—

	1862.	1860–61.
Ratio per 1,000 of Strength constantly Sick	44·70	46·72
	Days.	Days.
Average Sick time to each Soldier	62·32	17·05
Average duration of cases of Sickness	18·88	19·89

This shows a reduction of 2 per 1,000 in the numbers constantly non-effective from sickness, and of a day in the duration of the cases, compared with the average of the two preceding years.

Section IV.

On the Influence of Age on the Mortality.

The number of men serving, and the deaths at each age, in quinquennial periods, are stated in Abstract No. XXII. of Appendix. The results are shown in the following Table, along with those for the three preceding years :—

Cape of Good Hope.

		Under 20	20–24	25–29	30–34	35–39	40 and upwards.
Ratio of Deaths per 1,000 living	1862 ..	3·50	8·83	8·14	19·92	8·89	105·26
	1859–61	6·65	10·48	9·49	10·26	16·09	20·13

With the exception of a slight excess at the period 20–24, the results for the three years 1859–61 do not differ materially from those for troops serving in the United Kingdom. The excessive rate at the age of 40 and upwards, in 1862, is simply the result of very limited numbers under observation.

VIII.—ON THE HEALTH OF THE TROOPS SERVING IN THE ISLAND OF MAURITIUS.

Section I.

Sickness and Mortality.

Mauritius.

In the beginning of January two batteries of the Royal Artillery disembarked at Port Louis from China; one of them remained as a permanent addition to the force, the other embarked for England on the 1st of February. With this exception, the troops employed in the Mauritius remained the same as in 1861.

The average strength during the year was 2,049; the admissions into hospital were 1,685, the deaths in hospital 85, out of hospital 2, and among the invalids sent home 3, making a total of 90. The ratio of admissions, therefore, was 822, and of deaths 43·92 per 1,000 of the strength.

The following Table shows the distribution of the admissions and deaths in the different corps:—

	Mean Strength for the Year.	Admissions into Hospital.	Deaths.				Ratio per 1,000.	
			In Hospital.	Out of Hospital.	Of Invalids.	Total.	Admitted.	Died.
Royal Artillery	247	298	18	1	1	20	1,206	80·97
Royal Engineers	175	118	3	..	..	3	674	17·14
2nd Batt., 5th Regiment.	815	796	24	..	..	24	977	29·45
,, 24th ,, ..	812	471	39	1	2	42	580	51·72

This shows the sickness and mortality to have been much higher in the Royal Artillery than in any of the other corps. The excess in the admissions was probably owing to upwards of half of the men having just arrived from China, where their health had suffered materially; and the high ratio of deaths is partly to be explained by the circumstances that on the first outbreak of cholera three batteries were exposed to its influence, and suffered severely from it, while, in consequence of the removal of a battery to England, the strength for the last eleven months of the year was that of two batteries only.

The influence of the different classes of diseases on the health of the troops is shown in the following Table. The detailed admissions and deaths for 1862 will be found in Abstract No. XX. of Appendix.

Mauritius.

Order.	Diseases.	Strength 2,049.,				1862.		1859–61.	
			Deaths.			Ratio per 1,000.		Ratio per 1,000.	
		Admitted.	At Mauritius.	Of Invalids.	Total.	Admitted.	Died.	Admitted.	Died.
	Class I.								
1	Miasmatic Diseases ..	654	74	..	74	319·2	36·11	369·7	9·49
2	Enthetic ,, ..	240	..	..	..	117·1	..	62·2	..
3	Dietic ,, ..	40	..	..	..	19·5	..	15·6	..
4	Parasitic ,, ..	10	..	..	..	4·9	..	12·3	..
	Class II.								
1	Diathetic Diseases ..	4	..	..	..	1·9	..	4·3	..
2	Tubercular ,, ..	20	4	1	5	9·8	2·44	12·6	1·38
	Class III.								
	Diseases of the—								
1	Nervous System ..	45	3	..	3	22·0	1·46	26·7	·99
2	Circulatory ,, ..	12	..	1	1	5·9	·49	12·4	·59
3	Respiratory ,, ..	48	..	1	1	23·4	·49	77·1	·59
4	Digestive ,, ..	197	3	..	3	96·1	1·46	85·6	1·38
5	Urinary ,, ..	5	..	..	..	2·4	..	3·0	..
6	Reproductive ,, ..	37	..	..	..	18·1	..	8·3	..
7	Locomotive ,, ..	13	..	..	..	6·3	..	5·3	..
8	Integumentary ,, ..	199	..	..	..	97·1	..	152·3	..
	Class IV.								
4	Diseases of Nutrition	12	..	..	..	5·9	..	11·5	·20
	Class V.								
1	Accidents	142	2	..	2	69·3	·98	76·9	1·38
4	Suicide	..	1	..	1	..	·49	·6	1·19
6	Corporal Punishment	3	..	..	..	1·5	..	4·3	..
	No appreciable disease	4	..	..	..	1·9	..	·2	..
	Diseases not specified	..	..	..	..	..	..	11·1	..
	Total ..	1,685	87	3	90	822·3	43·92	952·0	17·39

From this it appears that the admissions have been considerably under, but the deaths greatly in excess of the average of the three preceding years. The reduction has been chiefly in miasmatic diseases, and those of the integumentary system, while there has been an increase in the amount of venereal. The great increase in the deaths has arisen from the prevalence of epidemic cholera.

Miasmatic Diseases, when subdivided, give the following results :—

Diseases.	Admitted.	Died.	Ratio per 1,000 of Mean Strength.			
			1862.		1859–61.	
			Admitted.	Died.	Admitted.	Died.
Eruptive Fevers.. ..	..	..	..	..	·8	..
Paroxysmal ,, ...	45	3	22·0	1·46	21·3	·39
Continued ,, ...	98	1	47·8	·49	76·9	3·36
Dysentery, Diarrhœa, and Cholera	228	6	111·2	2·93	205·9	3·95
Spasmodic Cholera ..	169	64	82·5	31·23	1·8	·79
Sorethroat and Influenza ..	17	..	8·3	..	11·1	..
Ophthalmia..	39	..	19·0	..	19·6	..
Rheumatism	42	..	20·5	..	26·5	..

Paroxysmal Fevers.—The admissions by these have been in exactly the same proportion as on the average of the three preceding years. In the Reports for 1859 and 1860 it was shown that the high ratio in these years was caused by the arrival of the 61st Regiment from India, where it had suffered greatly from ague. In 1862, of 45 cases of paroxysmal fevers, 39 occurred in the Royal Artillery, among the men of the battery which landed in January from China. It is stated by the Surgeon that "all those affected with intermittent fever had suffered more or less frequently from it in that country."

Continued Fevers, though more prevalent than in 1861, were about one-third below the average of the three years, 1859-61.

Dysentery and *Diarrhœa* were also very much below the previous average, which is the more remarkable as diarrhœa is generally greatly in excess in those years in which an epidemic of cholera occurs.

Epidemic Cholera.—In the Report for 1861 it was stated that in the beginning of December this disease had appeared among the civil population of Grand River, and that towards the end of the month a detachment of the 5th Regiment at Petite Rivière had been attacked by it, five cases and four deaths having occurred before the close of the year. Early in January the disease appeared in Port Louis, and on the 19th the first case occurred among the troops quartered there. It spread rapidly among both civilians and the military, and did not subside among the former till the end of April; but among the troops it had almost ceased before the end of February, ten cases only having occurred at intervals subsequently to that date.

In January 69 cases and 26 deaths occurred, and in February 90 cases, and 32 deaths. The following Table shows the strength of each corps at the period of the outbreak of cholera, with the number of cases and deaths:—

	Strength on Jan. 19.	Cases of Cholera.	Deaths by Cholera.	Ratio per 1,000 of Strength.	
				Cases.	Deaths.
12th Brigade Royal Artillery	254	15	6	59·0	23·62
13th " " "	121	12	7	99·2	27·56
Royal Engineers	187	6	3	32·1	16·04
2nd Batt. 5th Regiment ..	851	55	14	64·6	16·45
" " 24th " ..	873	81	34	92·8	38·94

The Royal Engineers had the lowest proportion both of admissions and deaths, the 4th Battery, 13th Brigade, Royal Artillery, the highest proportion of admissions, and the 24th Regiment, of deaths. This battery was only exposed to the influence of the disease from the 19th January to the 1st February, on which date it sailed for England. No cases of cholera occurred on its passage home.

The disease occurred among the troops in the following proportion, at the different stations occupied by them:—

	Strength on 19th Jan.	Cases of Cholera.	Deaths by Cholera.	Ratio per 1,000.	
				Cases.	Deaths.
Port Louis	1,454	111	50	76·3	34·39
Mahebourg	375	44	7	117·3	18·67
Flacq	152	1	..	6·6	..
Cannonier Point	227	9	6	39·6	26·43
Black River	29	2	..	68·9	..
Petite Rivière	49	2	1	40·8	20·40

From this it appears that the highest ratio of admissions was at Mahebourg, but of deaths at Cannonier Point. Eight of the cases, and four deaths, how-

Mauritius. ever, at the latter station, occurred in a detachment five days after its arrival from Port Louis, where the disease was then prevailing among the troops.

The intensity of the disease among the troops is shown by the mortality having amounted to 1 in 2·64 cases. At Cannonier Point two out of three cases died. Surgeon Holloway, of the 24th Regiment, states the duration of the fatal cases in that corps to have been as follows:—

5 hours	1	14 hours	1
6 "	2	17 "	1
7 "	1	1 day	5
8 "	1	2 days	3
9 "	3	4 "	1
10 "	4	5 "	1
11 "	2		
12 "	1	Total ..	30
13 "	3		

None of the other Medical Officers have furnished information on this point.

No cases of cholera occurred among the officers. Of the soldiers' wives, averaging 103 in number, 7 were attacked, and 3 died; among 157 children, there were 6 cases, and 4 deaths.

During the prevalence of this epidemic 3,303 deaths were caused by it in a population of 311,279, being in the ratio of 10·61 per 1,000. The following Table shows the distribution of the cases:—

Districts.	Population.	Deaths by Spasmodic Cholera.	Proportion of Deaths to Population.
Port Louis	75,754	1,433	18·92
Pamplemousses	53,598	726	13·55
Rivière du Rempart	19,331	82	4·24
Flacq	41,468	226	5·45
Grand Port	37,207	148	3·98
Savanne	21,026	106	5·04
Black River	17,171	208	12·11
Plaines Wilhems	28.020	210	7·49
Moka	17,704	164	9·28
	311,279	3,303	10·61

This shows the disease to have been most fatal in the districts of Port Louis, Pamplemousses, and Black River. No fair comparison can be instituted between the mortality in the general population, composed of all ranks and ages, and the military; but the latter suffered most at Port Louis, where the loss of the civil population also was the greatest.

Diseases of the Respiratory System were very much under the previous average, while those of the stomach and bowels were 10 per 1,000 higher than formerly. In the latter class there were 73 cases returned by the Surgeon of the 5th Regiment as congestion of the liver.

Violent Deaths.—Of three deaths in this class, two were accidental, and one suicidal. Of the former, one was the result of drowning, and the other of an injury to the spine from a fall. The suicide was effected by hanging.

Section II.

On the Extent of Invaliding.

During the year 51 men were sent to England recommended for discharge from the service, and 32 for change of climate, being in the proportion respectively of 24·9 and 15·6 per 1,000 of the strength. The diseases for which they were invalided are stated in Abstract No. XXI. of Appendix, from which the following classified summary has been prepared :— *Mauritius.*

	Number sent Home—	
	Recommended for Discharge.	For Change of Climate.
Intermittent Fever	..	4
Ophthalmia	1	..
Dysentery	2	6
Rheumatism	4	3
Venereal	1	..
Tubercular Diseases	11	..
Diseases of the—		
Nervous System	5	1
Circulatory „	5	4
Respiratory „	5	5
Digestive „	4	4
Locomotive „	7	..
Integumentary „	2	..
Diseases of Nutrition	2	5
Accidents and Violence	2	..
Total	51	32
Ratio per 1,000 of Mean Strength ..	24·9	15·6

The number finally discharged the service as invalids from the Mauritius was 45, or 19·5 per 1,000 of the strength. The disabilities for which they were reported unfit for service were as follows :—

Rheumatism and Chronic pains	1
Eye Diseases	2
Venereal	2
Cachexies and Scrofula	2
Weakly Constitution and Debility	1
Mental Diseases	3
Epilepsy	2
Deafness	2
Cardiac Disease	6
Pulmonary „	11
Dysentery and Hepatic Disease	4
Hernia	2
Contractions	2
Ulcers and Varices	3
Worn out	2
Total	45
Ratio per 1,000 of Strength, 1862	22·0
„ „ 1859–61	7·7

The proportion of men discharged in 1862 was greatly above the average of the three preceding years. This may perhaps have been to some extent attributable to the circumstance that in 1861 only two men were sent home as invalids. The number, therefore, in the year now under review, may rather be considered as the accumulation of two years. Pulmonary disease will be observed to be that which has given rise to the greatest number of discharges, and has also been the chief cause of invaliding to England.

Section III.

Mean Daily Sick.

Mauritius. The average constantly sick in hospital throughout the year was 65, or in the ratio of 31·72 per 1,000 of the strength, which is higher than in 1861, but under the average of the three years, 1859–61. The following Table gives the usual information on this subject:—

	1862.	1859–61.
Ratio per 1,000 of Strength constantly Sick	31·72	38·53
	Days.	Days.
Mean Sick-Time to each Soldier	11·58	14·06
Average duration of cases of Disease	14·08	14·77

This shows the proportion constantly sick, and the mean sick time to each soldier, to have been considerably under the previous average, but the average duration of the cases to have been only about three-quarters of a day less than formerly.

Section IV.

On the Influence of Age on the Mortality.

The following Table shows the ages of the troops on the 1st of April, and the deaths at each age during the year:—

Age	Under 20.		20–24.		25–29.		30–34.		35–39.		40 and upwards.	
	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.
Royal Artillery ..	..	..	62	2	102	4	57	4	10	2	2	..
Royal Engineers ..	5	..	58	1	82	1	22	1	10	..	2	..
2nd Bat. 5th Regt. ..	264	4	294	14	176	4	68	2	11	..	..	..
2nd Bat. 24th Regt. ..	48	1	548	21	158	11	45	7	11	2	..	..
Total	317	5	962	38	518	20	192	14	42	4	4	..
Ratio of Deaths per 1,000 of Strength:												
1862	15·77		39·50		38·61		72·92		95·24		..	
1859–61 ..	8·23		13·12		15·69		45·45		60·00		..	

These results show a very great increase in the mortality after thirty years of age.

IX.—ON THE HEALTH OF THE TROOPS SERVING IN THE ISLAND OF CEYLON.

Section I.

Sickness and Mortality.

Ceylon.

No change took place during the year in the composition of the force serving in the island.

I.—White Troops.

The average strength of the white troops was 874; the admissions into hospital were 1,078; the deaths in hospital were 12, and out of it 4, and 1 invalid died on his passage home, making the total 17. These numbers give the proportion of 1,233 admissions and 19·43 deaths per 1,000 of mean strength, the former being two hundred under and the latter almost identical with the average of the preceding year.

The diseases by which the sickness and mortality were occasioned are stated in Abstract No. XX. of Appendix, from which, and previous reports, the following classified Table has been prepared:—

	White Troops ..	Strength, 874.				Annual Ratio per 1,000.			
			Died.			1862.		1859–61.	
Orders.	Diseases.	Admitted.	At Ceylon.	Of Invalids.	Total	Admitted.	Died.	Admitted.	Died.
	Class I.								
1	Miasmatic Diseases	386	3	..	3	441·6	3·43	633·0	10·96
2	Enthetic „ ..	206	..	..	..	235·7	..	232·1	·37
3	Dietic „ ..	27	1	..	1	30·9	1·14	13·9	..
4	Parasitic „ ..	1	..	..	..	1·1	..	5·1	..
	Class II.								
1	Diathetic Diseases ..	1	1	..	1	1·1	1·14	5·5	..
2	Tubercular „ ..	25	4	1	5	28·6	5·72	15·0	2·19
	Class III.								
	Diseases of the—								
1	Nervous System..	42	1	..	1	48·1	1·14	55·2	2·92
2	Circulatory „ ..	18	1	..	1	20·6	1·14	15·4	·73
3	Respiratory „ ..	61	..	..	..	69·8	..	90·6	1·46
4	Digestive „ ..	101	2	..	2	115·6	2·29	196·3	4·38
5	Urinary „ ..	3	..	..	..	3·4	..	5·8	·37
6	Reproductive „ ..	25	..	..	..	28·6	..	10·6	..
7	Locomotive „ ..	3	..	..	..	3·4	..	4·8	·37
8	Integumentary „ ..	100	..	..	..	114·4	..	155·3	..
	Class IV.								
4	Diseases of Nutrition	7	..	..	..	8·0	..	8·0	..
	Class V.								
1	Accidents	71	3	..	3	81·2	3·43	141·5	·73
4	Suicide	..	..	..	..	..	..	..	·37
6	Corporal Punishment	1	..	..	..	1·1	..	4·0	..
	Diseases not specified	..	..	..	..	..	..	9·9	..
	Total	1,078	16	1	17	1,233·2	19·43	1,602·0	24·85

This Table shows a great decrease in the admissions compared with the average in the three preceding years. It has been most marked in miasmatic

Ceylon. diseases, but has likewise been very considerable in diseases of the digestive and integumentary systems, and in accidents.

MIASMATIC DISEASES, when subdivided, yield the following results :—

Diseases.	Admitted	Died.	Ratio per 1,000 of Mean Strength. 1862. Admitted	1862. Died.	1860–1. Admitted	1860–1. Died.
Eruptive Fevers..	..	..	..	..	·4	·36
Paroxysmal ,, ...	83	..	94·9	..	129·0	..
Continued ,, ...	12	..	13·7	..	53·7	..
Dysentery, Diarrhœa, and Cholera	83	4	94·9	4·58	263·2	9·14
Sorethroat and Influenza ..	7	..	8·0	..	15·3	..
Ophthalmia	141	..	161·3	..	89·9	..
Rheumatism	57	..	65·2	..	77·8	·36

This Table shows a very great reduction in the sickness and mortality by dysentery, diarrhœa, and cholera, and also a considerable reduction in fevers, both of the paroxysmal and continued forms. During part of the year small-pox and cholera were very prevalent among the civil population in different parts of the island, but only one case of the latter, of a very mild type, occurred among the white troops.

Ophthalmia has been twice as prevalent as on the average of the three preceding years. The disease was confined to the 50th Regiment, only four cases having occurred in the Royal Artillery. It was most prevalent at Colombo and Kandy, the admissions having amounted to one-fourth of the strength at the former, and one-fifth at the latter station, while at Trincomalee only six admissions took place by that disease in a detachment of 115 men.

DIETIC DISEASES.—The admissions by intemperance (*ebriositas*) show a marked increase upon the previous average.

TUBERCULAR DISEASES have given rise to nearly twice the proportion both of admissions and deaths. Although this may be an accidental increase, yet even the average of the three preceding years shows this class of diseases to be a source of considerable mortality. Seven men labouring under consumption were sent home as invalids, and of these one died on the passage.

DISEASES OF THE DIGESTIVE SYSTEM have been greatly below the average, the reduction being most marked in cases of inflammation of the liver. Dyspepsia and colic have also been less prevalent.

The other classes of diseases do not seem to require special notice.

II.—BLACK TROOPS.

The mean strength of this force was 1,468; the admissions into hospital were 1,506, and the deaths amounted to 22, of which 4 occurred out of hospital. The ratio of admissions, therefore, was 1,026, and of deaths 14·98 per 1,000 of the strength, the former being considerably lower, and the latter one-third higher than in 1861.

The influence of the different classes of diseases in causing this sickness and mortality is shown in the following Table, prepared from Abstract No. XX. of Appendix :—

Orders.	Black Troops	Strength 1,468.		Annual Ratio per 1,000 of Mean Strength.			
	Diseases.	Admitted	Died.	1862.		1859–61.	
				Admitted	Died.	Admitted	Died.
	Class I.						
1	Miasmatic Diseases ..	874	16	595·4	10·90	671·3	5·06
2	Enthetic „ ..	51	..	34·7	..	28·6	..
3	Dietic „ ..	1	..	·7	..	1·1	..
4	Parasitic „ ..	144	..	98·1	..	59·0	..
	Class II.						
1	Diathetic Diseases ..	3	..	2·0	..	4·8	·66
2	Tubercular „ ..	5	1	3·4	·68	3·3	1·10
	Class III. Diseases of the—						
1	Nervous System ..	19	1	12·9	·68	8·4	·88
2	Circulatory „ ..	3	2	2·4	1·36	1·5	·88
3	Respiratory „ ..	82	1	55·8	·68	38·9	·66
4	Digestive „ ..	48	..	32·7	..	31·2	·66
5	Urinary „ ..	1	..	·7	..	..	..
6	Reproductive „ ..	8	..	5·4	..	5·9	..
7	Locomotive „ ..	2	..	1·3	..	·7	..
8	Integumentary „ ..	153	..	104·2	..	145·7	..
	Class IV.						
4	Diseases of Nutrition ..	..	..	..	..	1·3	·22
	Class V.						
1	Accidents	112	1	76·3	·68	72·6	·44
4	Suicide	..	..	..	..	·2	·44
6	Corporal Punishment ..	..	..	..	..	·7	..
	Diseases not specified ..	..	..	..	..	1·8	..
	Total	1,506	22	1026·0	14·98	1077·0	11·00

The admissions have been under, and the deaths considerably above the average of the three preceding years. The decrease in the former has been chiefly in miasmatic diseases, and those of the integumentary system; the increase in the latter has taken place in miasmatic diseases.

Miasmatic Diseases.—On subdividing these into groups, the following results are obtained :—

Diseases.	Admitted	Died.	Ratio per 1,000 of Mean Strength.			
			1862.		1859–61.	
			Admitted	Died.	Admitted	Died.
Eruptive Fevers	11	..	7·5	..	10·8	..
Paroxysmal „	524	1	356·9	·68	401·5	1·32
Continued „	17	1	11·6	·68	76·1	·22
Dysentery, Diarrhœa, and Cholera	77	4	52·4	2·72	51·5	1·76
Spasmodic Cholera	12	10	8·2	6·81	2·9	1·76
Sorethroat and Influenza ..	1	..	·7	..	2·6	..
Ophthalmia	116	..	79·0	..	74·1	..
Rheumatism	83	..	56·5	..	43·1	..

Eruptive Fevers were below the average. Eight of the cases were chicken-pox. Although small-pox was prevalent among the native population in several districts, no case of it occurred among the troops.

Paroxysmal Fevers were less prevalent than on the average of the three

Ceylon. preceding years, and very much under the amount in 1861. The great excess in that year occurred at Trincomalee. In 1862 the number of cases of intermittent fever at that station did not amount to one-third of the proportion in the preceding year.

Continued Fevers have undergone a great reduction, the admissions having amounted to only one-seventh of the previous average.

Spasmodic Cholera appeared among the civil population of the district of Jaffna, in February, and continued to prevail till the end of September. It did not attack the troops till the 6th of July, between which date and the 3rd of August 12 cases occurred, 8 of which died. The disease was also epidemic among the native population in the districts of Kandy and of Galle, but did not extend to the troops. In addition to the eight deaths at Jaffna, there were two of men who were absent from their corps on furlough, one in the end of September, and the other of October. The outbreak and malignant type of the disease among the troops at Jaffna was attributed by the Medical Officer in charge to the insanitary condition of the huts for the married men, and to the foul condition of the latrines, which was worse than usual owing to the late period at which the rains set in. The huts were cleansed and whitewashed, and new latrines were built, and the disease ceased among the troops.

PARASITIC DISEASES.—The admissions in this class were entirely from itch, of which there were 144 cases. The spread of the disease is attributed to the filthy condition of the native huts, and the want of habits of cleanliness among the population.

TUBERCULAR DISEASES.—It will be observed that these diseases have been comparatively rare among the native troops, affording a marked contrast in this respect to their prevalence among the black troops in the West Indies and Western Africa. The diseases of the respiratory system also have given rise to a very low ratio of mortality.

There was no case of CORPORAL PUNISHMENT among the native troops during the year.

SECTION II.

On the extent of Invaliding.

Twenty-eight men were sent as invalids to England recommended for discharge from the service, and 41 for change of climate, making a total of 69, or 78·9 per 1,000 of the strength, which is greatly in excess of the proportion in the preceding year. The disabilities of the invalids are stated in Abstract No. XXI. of Appendix, from which the following summary has been made :—

Diseases.	Recommended—	
	For Discharge.	For Change of Climate.
Ophthalmia	2	2
Dysentery and Diarrhœa..	..	9
Rheumatism	1	4
Secondary Syphilis	..	2
Consumption	6	1
Diseases of the—		
Nervous System..	7	5
Circulatory ,, ...	3	..
Digestive ,, ...	3	12
Urinary ,, ...	..	3
Locomotive ,, ...	..	1
Integumentary ,, ...	..	1
Diseases of Nutrition	5	1
Accidents and Violence	1	..
Total	28	41
Ratio per 1,000 of Mean Strength 1862	32·0	46·9
Ratio per 1,000 of Mean Strength 1860–61.. ..	7·7	35·1

Ceylon.

Diseases of the digestive system have given rise to the highest proportion of invaliding ; 14 of the cases were inflammation of the liver. Diseases of the nervous system were next in frequency ; of the 12 returned in this class 7 were cases of headache.

Twenty-seven men who had been invalided to England were finally discharged the service there, and 39 of the black troops were discharged as invalids in Ceylon. The disabilities were as follows :—

Disabilities.	White Troops.	Black Troops.	Disabilities.		White Troops.	Black Troops.
Ophthalmia	2	1	Pulmonary Disease..		4	1
Diarrhœa	..	1	Pleurisy		..	1
Venereal	1	1	Asthma		..	2
Rheumatism, &c. ..	6	5	Orchitis		..	1
Weakly Constitution and Debility	2	..	Psoriasis		..	1
			Atrophy		..	18
Cachexies and Scrofula	1	3	Wounds		4	..
Inflammation of Brain	1	..	Fracture		..	1
Paralysis	1	1				
Mental Imbecility ..	..	1	Total ..		29	39
Epilepsy	3	..				
Deafness	1	..	Ratio per 1,000 of Strength	1862 ..	33·2	26·6
Cardiac Disease ..	3	1		1859–61	5·1	23·1

The proportion discharged of the white troops has been greatly in excess of the previous average. The disabilities have not been confined to any class, but rheumatism has furnished the highest proportion. The discharges of the black troops have been slightly above the average, the chief disability assigned being atrophy.

SECTION III.

On the Mean Daily Sick.

The average number constantly sick of the white troops was 66, and of the black troops 49. From these numbers the following results are obtained :—

	White Troops.		Black Troops.	
	1862.	1859–61.	1862.	1859–61.
Ratio per 1,000 of Strength constantly sick..	75·51	72·00	33·38	31·02
	days.	days.	days.	days.
Average sick time to each Soldier	27·56	26·28	12·18	11·32
Average duration of Cases of Sickness ..	22·35	16·41	11·87	10·51

There has been a slight increase in the mean sick and average sick time to each soldier, in both classes of troops. Among the white troops there is a marked increase in the average duration of the cases in hospital, from which it may be inferred that the great reduction in the admissions into hospital has taken place in those slight cases which require only a few days of treatment, while the proportion of severe cases has remained as formerly. The increase in the duration of cases among the black troops has been comparatively slight, but in that force the reduction in the admissions was much less than among the white troops.

SECTION IV.

Influence of Age on the Mortality.

Ceylon. The numbers living, and the deaths at each age, in quinquennial periods, are shown in the following Table:—

Ages	Under 20.		20–24.		25–29.		30–34.		35–39.		40 and upwards.	
	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.
WHITE TROOPS.												
Royal Artillery ..	3	..	24	..	61	..	11	..	6	1	..	..
50th Regiment ..	33	..	280	5	333	6	94	2	36	3	..	..
Total	36	..	304	5	394	6	105	2	42	4	..	..
Ratio of Deaths per 1,000 of Strength:												
1862	..		16·45		15·23		19·05		95·24		..	
1860-61 ..	..		12·36		28·32		27·27		23·26		200·00	
BLACK TROOPS.												
Ceylon Rifles	210	2	206	4	245	7	345	3	179	3	79	1
Gun Lascars	8	..	40	..	61	2	31	..	18	..	19	..
Total	218	2	246	4	306	9	376	3	197	3	98	1
Ratio of Deaths per 1,000 of Strength:												
1862	9·39		16·26		29·41		7·98		15·23		10·20	
1859–61 ..	6·85		6·38		8·09		6·18		25·25		12·90	

The numbers are not sufficiently large to afford a fair average, but looking to the results of the three years 1860-62, they furnish proof of a very rapid increase of mortality among the white troops with the advance of age. The results for the black troops are very irregular, a result, doubtless, of the small number under observation.

X.—ON THE HEALTH OF THE TROOPS IN THE AUSTRALIAN COLONIES.

1. *Sickness and Mortality.*

I. AUSTRALIA AND TASMANIA.

Australia. The troops in Australia and Tasmania consisted, as in 1861, of Royal Artillery, Royal Engineers, a wing of the 1st Battalion 12th, and a wing of the 40th Regiments. Their average strength was 1,000, the admissions into hospital were 683, the deaths in hospital 12, out of it 7, and among the invalids at sea and at the invalid depôts 3, making a total of 22 deaths. These numbers, of course, give the ratio of 683 admissions, and 22 deaths, per 1,000, the former being considerably under, and the latter above the proportion in 1861.

The following Table shows the admissions and deaths by classes of diseases. The details will be found in Abstract No. XXIII. of Appendix.

Australia.

Average Strength .. 1,000		Australia and Tasmania.							
		1862.						1859–61.	
			Died.			Ratio per 1,000.		Ratio per 1,000.	
Orders.	Classes of Diseases.	Admitted.	In the Colony.	Of Invalids.	Total Deaths.	Admitted.	Died.	Admitted.	Died.
	Class I.								
1	Miasmatic Diseases ..	209	2	..	2	The average strength being 1,000, the ratios and numbers, of course, are identical.		231·8	2·16
2	Enthetic " ..	115	..	..	..			122·5	..
3	Dietic " ..	27	..	..	..			22·9	..
4	Parasitic " ..	2	..	..	..			1·1	..
	Class II.								
1	Diathetic Diseases ..	3	..	..	..			6·2	·54
2	Tubercular " ..	27	7	2	9			15·1	3·50
	Class III. Diseases of the—								
1	Nervous System ..	21	2	..	2			24·3	2·16
2	Circulatory " ..	13	4	..	4			13·0	1·89
3	Respiratory " ..	13	1	..	1			62·6	1·08
4	Digestive " ..	56	..	..	..			43·4	·81
5	Urinary " ..	3	1	..	1			4·6	·54
6	Reproductive " ..	2	..	..	..			1·1	..
7	Locomotive " ..	3	..	..	..			2·7	..
8	Integumentary ..	63	..	..	..			72·6	..
	Class V.								
1	Accidents	120	2	..	2			93·6	·81
4	Suicide	..	..	..	..			..	·27
6	Corporal Punishment	1	..	..	..			2·2	..
	Diseases not specified	1	..	1	1			17·5	..
	No appreciable Disease	4	..	..	..			..	..
	Total	683	19	3	22	683·	22·	737·2	13·76

A comparison of the results for 1862, with the average of the three preceding years, shows a considerable decrease in the admissions but an increase in the mortality. The former has been chiefly in diseases of the respiratory system and miasmatic diseases, the latter in tubercular diseases. There has been an increase in the admissions by accidents, and also in tubercular diseases.

Miasmatic Diseases give the following results, when subdivided into groups :—

Diseases.	Admitted.	Died.	Annual Ratio per 1,000 of Strength.			
			1862.		1859–61.	
			Admitted.	Died.	Admitted.	Died.
Eruptive Fevers	..	..	..	..	1·6	..
Paroxysmal "	8	1	8·	1·	2·1	..
Continued "	19	..	19·	..	21·9	1·35
Dysentery, Diarrhœa, and Cholera	42	1	42·	1·	43·7	·54
Sorethroat and Influenza ..	36	..	36·	..	53·7	·27
Ophthalmia	19	..	19·	..	54·8	..
Rheumatism	66	..	66·	..	46·9	..

Australia. This shows the reduction in the admissions to have taken place chiefly in ophthalmia, and in sorethroat (*tonsillitis*) and influenza, while there has been an increase in the cases of rheumatism. The other groups differ little from the average.

Tubercular Diseases have been nearly twice as prevalent, and thrice as fatal, as on the average of the three preceding years. This has probably arisen from the circumstance that when the 12th and 40th Regiments embarked for service in New Zealand, all the weakly and delicate men were transferred to the wings of these corps which were left for service in Australia. But making every allowance for this, the number both of cases and deaths is still very high, and would seem to indicate that the climate of the Australian colonies is not well suited to persons having a tendency to these diseases.

Diseases of the Respiratory System have prevailed to only one-fifth of the usual amount. The difference has been chiefly in bronchitis, which occasioned only 13 admissions in the year. It has already been shown that sorethroat and influenza, which are intimately allied to this disease, were also considerably under the previous average.

II. New Zealand.

New Zealand. There was no change in the force serving in New Zealand during 1862. The average strength of non-commissioned officers and men was 5,482, among whom there were 2,991 admissions into hospital, and 50 deaths. Of the latter, 41 occurred in, and 8 out of hospital, and 1 among invalids on the passage home. These numbers show the admissions to have been in the ratio of 546, and the deaths of 9·10 per 1,000 of the strength, being both lower than in 1861.

The admissions and deaths were in the following proportion :—

Corps.	Mean Annual Strength.	Admissions into Hospital.	Deaths.				Ratio per 1,000.	
			In Hospital.	Out of Hospital.	Of Invalids.	Total.	Admitted	Died.
Royal Artillery.. ..	292	163	3	..	..	3	558	10·27
,, Engineers ..	65	22	1	..	..	1	339	15·38
Detachment 1st Batt., 12th Regiment	260	143	..	..	..	..	550	..
2nd Batt. 14th Regt. ..	1,234	618	11	..	..	11	501	8·91
Detachment 40th Regt.	695	432	5	2	..	7	622	10·07
57th Regiment.. ..	971	725	10	1	..	11	747	11·32
65th ,, ...	1,045	496	2	2	1	5	475	4·78
70th ,, ...	846	386	7	2	..	9	456	10·64

The three other deaths were those of a serjeant and two privates of the Commissariat Staff Corps.

With the exception of the Royal Engineers, whose numbers are extremely limited, the lowest ratio of sickness has been in the 70th, and of deaths in the 65th Regiment. The highest ratio of both was in the 57th, but that corps, it must be remembered, arrived in New Zealand in 1861 after 8 years' service in India.

The diseases by which the admissions and deaths were caused are stated in Abstract No. XXIII. of Appendix, from which the following classified summary has been prepared :—

New Zealand.

Orders.	Average Strength ..	5,482.				Ratio per 1,000 of Mean Strength.			
	Diseases.	Admissions.	Deaths.			1862.		1859–61.	
			In New Zealand.	Of Invalids.	Total.	Admitted.	Died.	Admitted.	Died.
	Class I.								
1	Miasmatic Diseases ..	1,109	2	..	2	202·3	·36	207·6	1·55
2	Enthetic „ ..	132	..	..	..	24·1	..	33·3	..
3	Dietic „ ..	85	1	..	1	15·5	·18	7·2	·90
4	Parasitic „ ..	86	..	..	..	15·7	..	11·0	..
	Class II.								
1	Diathetic Diseases ..	33	3	..	3	6·0	·55	5·2	..
2	Tubercular „ ..	29	9	..	9	5·3	1·64	10·2	2·33
	Class III. Diseases of the—								
1	Nervous System ..	118	4	..	4	21·5	·73	22·1	·52
2	Circulatory „ ..	47	8	..	8	8·6	1·46	6·2	·65
3	Respiratory „ ..	226	5	..	5	41·2	·91	80·9	·65
4	Digestive „ ..	158	4	..	4	28·8	·73	35·7	·65
5	Urinary „ ..	16	2	..	2	2·9	·36	1·6	·13
6	Reproductive „ ..	23	..	..	..	4·2	..	4·3	..
7	Locomotive „ ..	18	..	..	..	3·3	..	2·5	..
8	Integumentary „ ..	418	2	..	2	76·2	·36	84·8	·13
	Class IV.								
4	Diseases of Nutrition ..	2	..	..	..	·4	..	·6	..
	Class V.								
1	Accidents	462	7	..	7	84·3	1·28	87·8	1·55
2	In Battle	..	..	..	..	..	..	17·5	7·12
3	Homicide	1	1	..	1	·2	·18	..	..
4	Suicide	2	..	..	..	·4	..	..	..
5	Execution	..	1	..	1	..	·18	..	..
6	Corporal Punishment ..	25	..	..	..	4·5	..	2·6	..
	Diseases not specified ..	..	..	1	1	..	·18	9·4	..
	Malingering	1	..	..	..	·2	..	..	..
	Total	2,991	49	1	50	545·6	9·10	630·5	16·18

This shows a considerable decrease in the admissions compared with the results of the three preceding years, but the proportion of deaths will be found to correspond very closely in the two periods, when the casualties in the field are deducted.

Miasmatic Diseases.—The ratio of admissions by this class corresponds closely with the average of the previous period. When subdivided into groups, they furnish the following results:—

Diseases.	Admitted.	Died.	Annual Ratio per 1,000 of Strength.			
			1862.		1859–61.	
			Admitted.	Died.	Admitted.	Died.
Paroxysmal Fevers	21	..	3·8	..	10·3	..
Continued „	114	1	20·8	·18	14·9	·78
Dysentery, Diarrhœa, and Cholera	227	1	41·4	·18	46·2	·78
Sorethroat and Influenza ..	176	..	32·1	..	39·6	..
Ophthalmia	334	..	60·9	..	42·7	..
Rheumatism	142	..	25·9	..	44·7	..

New Zealand. *Paroxysmal Fevers* were less prevalent than in the preceding year, and were, as then, confined to the two regiments which had arrived in 1861 from India, where the men had contracted the liability to that form of disease.

Continued Fever and Ophthalmia are the only groups in which an increase in the admissions has taken place. The former was most prevalent in the 57th Regiment, but the cases were all of a very mild type. It was believed to be, in some degree, at least, attributable to overcrowding and defective ventilation. *Ophthalmia* occasioned the greatest number of admissions in the 70th Regiment, and was believed by the Surgeon to have been chiefly caused by the defective sanitary construction of the camp at Otahuhu. The following extract is taken from the Report of Dr. Meikleham, the Surgeon of the regiment :—

"With regard to the special causes for the prevalence of ophthalmia in the regiment, they are various. There are three very noticeable defects about the camp and huts at Otahuhu, which have, I believe, been mainly instrumental in the production of this disease : these are bad drainage, too small an amount of cubic space per man in the huts, and an imperfect plan of ventilation. The huts have been already described as being far too close together, and their floors—the bare earth—are either on a level with the surface of the ground, or below it, in no instance above it, and except in a few huts, roof ventilation is wanting ; the drainage is all open, and either evaporates or soaks into the soil forming the floors of the huts. It is a remarkable fact in the disease, as it has appeared, that nearly one-third of the men who have suffered from it belong to the band and drums. The huts they originally occupied are the worst in the whole lines. The ground here, which is slightly elevated, has been so much cut away that the men have to descend a step or two on entering, and the tops of the side walls which support the roofs are barely on a level with the surrounding surface.

"The occupants of these huts live literally under ground, and the amount of drainage and surface water that soaks into them is such as to convert their floors in very wet weather into a perfect puddle. When, in addition to this, it is remembered they furnish no duty men, that their instruments, and the cases for them, are kept in their huts, the cubic area per man being thereby very materially diminished, it is no wonder the band should in so marked a manner have been the subjects of ophthalmia. A suggestion was consequently made that these men should be moved out of their huts, and be encamped under canvas on the banks of the small tidal river Tamaki, that runs along the border of the camp, and that their huts should be whitewashed. This plan was carried out, and acted very beneficially in arresting the complaint.

"In order to mark more strongly the influence that the causes above mentioned, namely, the original faulty plan and construction of the camp and huts have had in the production of this disease, I may state that while the regiment was employed on the roads, from January till May inclusive, the number of men admitted into hospital for ophthalmia was only 18, and during this period the average strength was 610 men. The subsequent seven months were spent by the head-quarters of the regiment, whose strength then only averaged 482, in the huts at Otahuhu, and in this period 62 cases of ophthalmia occurred amongst them. By calculating the admission per 1,000 of mean strength, we should have 29½ during the time on the roads, and 128 while in the huts. In giving this slight sketch of the origin of the disease, it must be remembered how difficult it is to trace indisputably, in all cases, cause and effect. Circumstances have, however, I think, been adduced, which if not acting as special causes of the ophthalmia in the regiment, have at all events induced a state of the system highly favourable to its development."

The Principal Medical Officer states that as soon as the influence of the defective sanitary state of the huts was clearly manifest, the men were placed under canvas, and the building in question will not be again occupied.

DISEASES OF THE RESPIRATORY SYSTEM have been much less prevalent than before. No special reason has been assigned for the reduction, which has been steadily progressive since 1859. The other classes of diseases do not seem to require particular notice.

SECTION II.

On the Extent of Invaliding.

Australasia. There were 46 men sent home from Australia recommended for discharge, and 96 from New Zealand, for discharge, and 16 for change of climate. These

Australasia.

numbers give the proportion of 46 invalids from Australia, and 20·43 from New Zealand, per 1,000 of the force. The disabilities of the men are stated in detail in Abstract No. XXIV. of Appendix, of which the following is a classified summary :—

Diseases.	Australia.		New Zealand.	
	Recommended for Discharge	Recommended for Change of Climate.	Recommended for Discharge	Recommended for change of Climate.
Ophthalmia	3	..	6	2
Dysentery and Diarrhœa	..	..	1	1
Intermittent Fever	..	..	2	..
Rheumatism..	18	..	10	..
Venereal	..	..	2	1
Constitutional Diseases	..	..	1	1
Tubercular "	7	..	10	1
Diseases of the—				
Nervous System	2	..	19	4
Circulatory "	9	..	13	2
Respiratory "	2	..	8	2
Digestive "	1	..	6	1
Urinary "	1	..	2	..
Locomotive "	2	..	4	..
Integumentary "	1	..	4	..
Accidents, &c.	..	..	7	1
Wounds in Battle	..	..	1	..
Total	46	..	96	16
Ratio per 1,000 of Mean Strength .. .. 1862..	46·0	..	17·5	2·9
1861..	39·7	..	15·9	5·1

The proportion invalided from Australia has been slightly above the ratio of the preceding year. Rheumatism has been the principal disability in that Command, and diseases of the nervous system in New Zealand. There were 10 cases of mental disease sent home from New Zealand, and none from Australia.

The numbers finally discharged the service as invalids in 1862 were 32 from Australia, and 40 from New Zealand. The causes assigned for their discharge were as follows :—

Diseases.	Australia	New Zealand.	Diseases.	Australia	New Zealand.
Rheumatism and Chronic Pains ..	10	5	Stricture and Urinary Disease ..	1	1
Venereal	2	..	Contractions ..	1	1
Weakly Constitution and Debility ..	..	1	Ulcers and Varices ..	3	2
Cachexies & Scrofula	1	..	Dislocation, Fracture, &c...	1	..
Eye Diseases ..	2	5	Wounds	..	1
Deafness	..	2			
Paralysis	1	1	Total	33	40
Epilepsy	2	1			
Mental Disease ..	..	6	Ratio per 1,000 of Mean Strength :		
Cardiac " ..	3	5			
Pulmonary " ..	6	6	1862..	33·0	5·2
Dysentery and Hepatic Disease ..	..	2		11·3	
Dropsy and Visceral Disease	..	1	1859–61	10·6	

Australasia.

It will be seen by this Table that rheumatism and pulmonary disease have been the chief causes of discharge among the invalids from Australia, and mental and pulmonary diseases among those from New Zealand. The number discharged in 1862 from the two Commands was nearly identical with the average of the three preceding years.

SECTION III.

Mean Daily Sick.

The mean daily sick in 1862 amounted, in Australia, to 32, and in New Zealand to 172, being respectively in the proportion of 32 and 31·37 per 1,000 of the strength. The following Table gives the usual information on this head:—

	Australia and Tasmania.		New Zealand.	
	1862.	1859–61.	1862.	1861.
Ratio per 1,000 constantly sick ..	32·00	37·15	31·37	31·29
	Days.	Days.	Days.	Days.
Average sick time to each soldier ..	11·68	13·56	11·45	11·42
Average duration of cases	17·10	18·04	20·99	18·20

This Table shows a close approximation of the results in Australia and New Zealand. In the latter, however, the duration of disease is rather longer. There has been a decrease in the mean daily sick in Australia in 1862, but in New Zealand it has been almost exactly the same as in 1861.

SECTION IV.

On the Influence of Age on Mortality.

The strength of the troops serving in the Australian colonies, arranged according to ages, in quinquennial periods, and the deaths at each age, are stated in Abstract No. XXV. of Appendix, of which the following Table shows the results:—

		Under 20 Years.	20–24.	25–29.	30–34.	35–39.	40 and Upwards.
Ratio of deaths per 1,000 living ..	1862 ..	..	5·80	14·63	14·01	14·89	44·94
	1859–61	3·27	10·69	12·50	5·97	26·09	27·40

This Table does not show any great increase in the mortality with the advance of age. The numbers serving above thirty-five years are too few to give a fair average.

IX.—ON THE HEALTH OF THE TROOPS SERVING IN CHINA.

Section I.

Sickness and Mortality.

China.

The European force employed in China remained unchanged during the year, and consisted of Royal Artillery, Royal Engineers, the 31st, 67th, and 99th Regiments, with detachments of the Army Hospital and Commissariat Staff Corps. The native or Asiatic troops, at the commencement of the year, consisted of Gun Lascars, the 5th Bombay Native Infantry, and the 22nd Punjaub Native Infantry. In the beginning of October, the 22nd, and in the beginning of November, the 29th Bombay Native Infantry arrived in the Command. The latter corps relieved the 22nd Punjaub Regiment, which returned to India, and in the end of November a wing of the 5th Bombay Regiment also left for India.

In the end of April and beginning of May the British troops gave up Tientsin, and were moved to Shanghai, which was at that time threatened by the Taepings, leaving a detachment of 280 men to garrison the South Taku Fort. On the arrival of the force at Shanghai, it immediately took the field with a view to clear the country of the rebels within a radius of thirty miles round the city. This was accomplished by the end of May, but the troops were employed on several subsequent occasions on similar duty.

The average strength of the European troops employed in China was 3,511; the admissions into hospital amounted to 6,485; the deaths in hospital to 301, and out of it to 23, and there were 24 among the invalids, making the total deaths 348. These numbers give the ratio of 1,847 admissions, and 99·12 deaths per 1,000 of the strength.

The average strength of the native or Asiatic force was 1,725; the admissions into hospital from it were 2,500, and the deaths 41, of which 5 occurred out of hospital. There are no means of ascertaining whether any deaths occurred among invalids from this force on their passage to, or after their arrival in, India. These numbers show the proportion of admissions into hospital to have been 1,449, and of deaths 23·77 per 1,000 of the strength.

Adopting the same arrangement as in previous Reports, we shall examine separately the sickness and mortality among the troops serving in South and North China, including under the latter head Tien-tsin, the Taku Forts, and Shanghai.

SOUTHERN CHINA.

I. WHITE TROOPS.

The average strength of the European troops in Southern China during the year was 1,181; the admissions into hospital among them amounted to 2,104, and the deaths to 34, exclusive of those among the invalids on their passage home, being in the ratio, respectively, of 1,782, and 28·78 per 1,000 of the strength. The admissions have been considerably lower, but the deaths 8½ per 1,000 higher than in 1861.

The following Table, compiled from Abstract No. XXIII. of Appendix, and previous reports, shows the influence of the different classes of diseases in causing the sickness and mortality:—

China.

Order.	Strength	1,181.		Annual Ratio per 1,000.			
				1862.		1859-61.	
	Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
	Class I.						
1	Miasmatic Diseases	911	13	771 ·4	11 ·01	1311 ·2	26 ·37
	Enthetic ,, ...	517	..	437 ·8	..	469 ·3	..
	Dietic ,, ...	59	1	50 ·0	·85	27 ·1	·28
4	Parasitic ,, ...	2	..	1 ·7	..	5 ·2	..
	Class II.						
1	Diathetic Diseases	4	..	3 ·4	..	5 ·4	..
2	Tubercular ,, ...	8	2	6 ·8	1·69	9 ·1	·83
	Class III. Diseases of the—						
1	Nervous System	34	1	28 ·8	·85	33 ·1	2 ·62
2	Circulatory ,, ...	16	2	13 ·5	1 ·69	13 ·4	·41
3	Respiratory ,, ...	73	2	61 ·8	1 ·69	112 ·1	1 ·65
4	Digestive ,, ...	117	2	99 ·1	1 ·69	120 ·2	2 35
5	Urinary ,, ...	2	1	1 ·7	·85	1 ·8	..
6	Reproductive ,, ...	4	..	3 ·4	..	6 ·6	..
7	Locomotive ,, ...	3	..	2 ·5	..	5 ·9	..
8	Integumentary ,, ...	144	..	121 ·9	..	154 ·8	·14
	Class IV.						
4	Diseases of Nutrition	84	4	71 ·1	3 ·38	23 ·1	·28
	Class V.						
1	Accidents	119	6	100 ·8	5 ·08	92 ·5	1 ·10
3	Homicide	..	..	..	..	..	·14
4	Suicide	..	..	..	..	..	·14
6	Corporal Punishment ..	7	..	5 ·9	..	3 ·5	..
	Diseases not specified ..	..	..	..	..	36 ·7	·28
	Total.. ..	2,104	34	1781 ·6	28 ·78	2431 ·0	36 ·59

This Table shows a reduction in the admissions into hospital during the year to the extent of one-third of the average of the three preceding years. It has taken place chiefly in miasmatic diseases, but those of the respiratory system have also undergone a considerable diminution. Dietic diseases and diseases of nutrition, however, have been much more prevalent than formerly. The mortality, though higher than in 1861, has been under the average of the three years 1859-61, and the difference has been almost entirely in miasmatic disease. The deaths by diseases of nutrition, and by accidents and violence, have been considerably above the average.

Miasmatic Diseases, when subdivided into groups, give the following results :—

Diseases.	Admitted.	Died.	Annual Ratio per 1,000 of Strength.			
			1862.		1859-61.	
			Admitted.	Died.	Admitted.	Died.
Eruptive Fevers	..	..	..	..	·7	..
Paroxysmal ,, ...	425	1	359 ·9	·85	605 ·7	10 ·63
Continued ,, ...	77	1	65 ·2	·85	264 ·0	3 ·31
Dysentery and Diarrhœa ..	231	11	195 ·6	9 ·31	213 ·4	12 ·15
Spasmodic Cholera	..	..	..	..	3 ·0	2 ·76
Sorethroat and Influenza ..	19	..	16 ·1	..	15 ·5	..
Ophthalmia	76	..	64 ·3	..	116 ·5	..
Rheumatism	76	..	64 ·3	..	76 ·9	..

China

This Table shows the most marked decrease both in admissions and deaths to have taken place in fevers. There has also been a considerable reduction in the mortality by dysentery and diarrhœa, and in the prevalence of ophthalmia. Spasmodic or epidemic cholera, which was very fatal in the North of China, did not prevail among the troops at Hong Kong.

Dietic Diseases have been considerably in excess of the average of the three preceding years. The admissions were all under the head of intemperance (*ebriositas.*)

Diseases of the Respiratory System.—The reduction in this class of diseases has been attributable to the non-prevalence of bronchitis.

Violent and Accidental Deaths.—Three of these were by drowning, and two from fracture. There was no death by suicide.

II. Native Troops.

The average strength of the native or Asiatic troops in Southern China was 664. There were 840 admissions into hospital among them, and 6 deaths, being respectively in the ratio of 1,265 and 9·06 per 1,000 of the strength. The former is nearly identical with, but the latter is only one-third of, the ratio in 1861.

The following Table shows the influence of the different classes of diseases upon the health of the troops. The details for 1862 will be found in Abstract No. XXIII. of Appendix:—

Orders.	Diseases.	Strength, 664.		Annual Ratio per 1,000.			
				1862.		1859–61.	
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
	Class I.						
1	Miasmatic Diseases ..	614	1	924·7	1·51	1304·9	25·87
2	Enthetic ,, ..	58	1	87·4	1·51	95·6	·65
3	Dietic ,, ..	1	..	1·5	..	3·1	..
4	Parasitic ,, ..	2	..	3·0	..	46·3	..
	Class II.						
1	Diathetic Diseases ..	1	..	1·5	..	14·0	·39
2	Tubercular ,, ..	2	..	3·0	..	3·6	·78
	Class III. Diseases of the—						
1	Nervous System..	11	..	16·6	..	20·0	·65
2	Circulatory ,, ..	..	1	..	1·51	2·0	·39
3	Respiratory ,, ..	37	2	55·7	3·02	86·5	2·60
4	Digestive ,, ..	44	1	66·3	1·51	64·9	·78
5	Urinary ,, ..	..	..	..	..	2·5	..
6	Reproductive ,, ..	..	..	..	..	2·0	·13
7	Locomotive ,, ..	..	..	..	..	1·3	..
8	Integumentary ,, ..	29	..	43·7	..	112·3	·26
	Class IV.						
4	Diseases of Nutrition.	..	..	..	..	34·3	8·25
	Class V.						
1	Accidents	41	..	61·7	..	71·4	1·04
6	Corporal Punishment.	..	..	..	..	·6	..
	Diseases not specified	..	..	..	..	2·3	·26
	Total ..	840	6	1265·1	9·06	1867·6	37·05

This Table shows the admissions into hospital to have been one-third and the deaths three-fourths under the average of the three preceding years.

The decrease in the admissions was most marked in miasmatic diseases, and was also considerable in parasitic diseases and those of the integumentary system. The reduction in the deaths was chiefly in those by miasmatic diseases.

China.

Miasmatic Diseases, when subdivided, give the following results :—

Diseases.	Admitted.	Died.	Annual Ratio per 1,000 of Strength.			
			1862.		1859–61.	
			Admitted.	Died.	Admitted.	Died.
Eruptive Fevers	3	..	4·5	..	2·1	..
Paroxysmal „	375	..	564·8	..	890·3	9·88
Continued „	5	..	7·5	..	38·0	1·82
Dysentery and Diarrhœa ..	77	1	116·0	1·51	238·3	12·87
Sorethroat and Influenza ..	..	..	..	..	6·0	..
Ophthalmia..	5	..	7·5	..	17·2	..
Rheumatism	149	..	224·4	..	108·7	1·04

This Table shows the reduction to have extended to all the groups of diseases except eruptive fevers and rheumatism. The numbers of the former are very small, only two cases of chicken-pox and one of small-pox having occurred during the year, but the cases of rheumatism have been rather more than double the average. The only death in this class was caused by chronic dysentery.

Diathetic Diseases have undergone a great reduction, only one case of dropsy having been admitted, while in the preceding year both it and lumbago gave rise to numerous admissions.

Diseases of the Integumentary System have not greatly exceeded one-third of the previous average. The difference has been chiefly in *psoriasis*, of which only one case occurred, but which occasioned 59 admissions in 1861 and 46 in 1860.

Diseases of Nutrition.—This class was specially noticed in last Report as having given rise to considerable mortality. During the year now under review not a single case was referred to it.

NORTH CHINA.

I. White Troops.

In the beginning of the year the strength of the European force in the North of China was about 2,470 non-commissioned officers and men, of whom 164 were at Shanghai, and the rest at Tien-tsin and Taku. As already stated, the greater part of the force was moved, in April and May, to Shanghai, upon the evacuation of Tien-tsin, a detachment of 280 men only being left in the South Taku Fort. As the circumstances in which the troops at Tien-tsin and Shanghai were placed differed so greatly with regard both to quarters and duty, we purpose keeping the details of sickness and mortality distinct for the two stations.

The average strength of the European troops at Tien-tsin and Taku throughout the year was 968 ; the admissions into hospital among them were 1,162 ; and the deaths, exclusive of those of invalids, 68. These numbers give the ratio of 1,200 admissions and 70·24 deaths per 1,000 of the strength, being a reduction of about 200 per 1,000 in the former, and an increase of about 20 per 1,000 in the latter, upon the results of 1861. At Shanghai the average annual strength was 1,362, the admissions were 3,219, and the deaths 222, being respectively in the proportion of 2,363 and 163·00 per 1,000 of the strength. This fearfully high rate of mortality was due, in nearly equal proportions, to epidemic cholera and to dysentery and diarrhœa. At Tien-tsin epidemic cholera and small-pox were the chief causes.

In contrasting the high rate of sickness at Shanghai with what occurred in the preceding year in the North of China, it must not be forgotten that a large increase to the force took place at Shanghai just at the commencement of the usual sickly season, which must considerably affect the average proportion calculated for the whole year.

The diseases by which the admissions and deaths were caused are stated in Abstract No. XXIII. of Appendix, of which the following is a classified summary :—

Orders.	Diseases.	Shanghai, 1862.				Tien-tsin and Taku, 1862.				North China, 1861.	
		Average Strength, 1,362.		Annual Ratio per 1,000.		Average Strength, 968.		Annual Ratio per 1,000.		Annual Ratio per 1,000.	
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
	Class I.										
1	Miasmatic Diseases	2,362	185	1734·3	135·83	485	59	501·0	60·95	700·6	31.80
2	Enthetic ,, ...	319	..	234·2	..	204	..	210·7	..	238·7	..
3	Dietic ,, ...	48	..	35·2	..	34	1	35·1	1·03	20·2	·32
4	Parasitic ,, ...	4	..	2·9	..	10	..	10·3	..	15·1	..
	Class II.										
1	Diathetic Diseases	10	2	7·3	1·47	5	..	5·2	..	2·6	..
2	Tubercular ,, ...	3	1	2·2	·73	2	..	2·1	..	5·8	2·89
	Class III. Diseases of the—										
1	Nervous System	35	6	25·7	4·41	31	1	32·0	1·03	29·2	2·57
2	Circulatory ,, ...	5	3	3·7	2·20	5	2	5·2	2·07	7·1	1·29
3	Respiratory ,, ...	90	3	66·1	2·20	106	2	109·5	2·07	137·8	2·89
4	Digestive ,, ...	128	13	94·0	9·55	73	1	75·4	1·03	84·8	2·25
5	Urinary ,, ...	..	..	..	..	4	..	4·1	..	1·9	..
6	Reproductive ,, ...	3	..	2·2	..	1	..	1·0	..	7·1	..
7	Locomotive ,, ...	..	..	..	..	3	..	3·1	..	2·9	..
8	Integumentary ,, ...	97	..	71·2	..	93	1	96·1	1·03	71·6	..
	Class IV.										
4	Diseases of Nutrition	12	..	8·8	..	..	..	..	..	..	..
	Class V.										
1	Accidents	74	6	54·3	4·41	93	..	96·1	..	75·5	6·43
2	Battle	11	3	8·1	2·20	..	..	..	..	..	..
4	Suicide	..	..	..	..	..	1	..	1·03	..	..
6	Corporal Punishment	8	..	5·9	..	8	..	8·3	..	6·7	..
	Diseases not stated	10	..	7·3	..	5	..	5·2	..	7·4	·64
	Total	3,219	222	2363·4	163·00	1,162	68	1200·4	70·24	1415·0	51·08

China. There has been a reduction in the admissions at Tien-tsin compared with the results of 1861, but not to a greater extent than may be accounted for by the comparatively small force quartered there during the unhealthy season of the year. The high rate of mortality at Tien-tsin has been due entirely to miasmatic diseases, the proportion caused by the other classes having been only half as high as in 1861. At Shanghai miasmatic diseases have given rise to three-fourths of the sickness, and five-sixths of the mortality.

MIASMATIC DISEASES give the following results, when subdivided into groups :—

Diseases.	Shanghai.		Tien-tsin and Taku.		Annual Ratio per 1,000 of Strength.					
					Shanghai.		Tien-tsin and Taku.			
							1862.		1861.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Eruptive Fevers ..	11	1	58	10	8·1	·73	59·9	10·33	4 8	·64
Paroxysmal ,, ..	978	13	38	1	718·1	9·54	39·3	1·03	78·1	1·61
Continued ,, ..	276	12	129	7	202·6	8·81	133·3	7·23	181·2	9·31
Dysentery & Diarrhœa.	786	79	120	1	577·1	58·00	124·0	1·03	303·9	17·99
Spasmodic Cholera ..	141	79	41	40	103·5	58·00	42·4	41·32	3·2	2·25
Sorethroat & Influenza.	7	..	6	..	5·1	..	6 2	..	14·8	..
Ophthalmia	95	..	50	..	69 7	..	51·6	..	64·9	..
Rheumatism	64	1	34	..	47·0	·73	35·1	..	47·9	..

Eruptive Fevers have proved a source of considerable mortality at Tien-tsin. Small-pox prevailed to a great extent among the civil population there during the first half of the year, and among the troops 58 cases occurred and 10 deaths. At Shanghai 11 cases were admitted, of which 1 died. All the cases are reported to have had marks of vaccination but two, which bore marks of previous small-pox, and of these two one died.

Paroxysmal Fevers gave rise to a high proportion of admissions and deaths. About two-thirds of the cases were of the intermittent and one-third of the remittent type. The existence of these diseases could be easily accounted for by the malarious influences to which the troops were exposed when on field service, and the emanations from the mud banks exposed at low tides.*

Continued Fevers also caused a comparatively high mortality. They were probably the result of the overcrowding, which was unavoidable at first when a large force was unexpectedly assembled at Shanghai, and also of the very defective sanitary condition of the city.

Dysentery and Diarrhœa were, next to paroxysmal fevers, the most prevalent diseases, and occasioned a very high mortality. They were probably, to a great extent, caused by the same insanitary conditions as the fevers, but were also, undoubtedly, partly due to the epidemic influence which gave rise to spasmodic cholera.

Spasmodic Cholera occasioned a higher rate of mortality than arose from all causes in North China in 1861. At Shanghai the deaths amounted to 58, and at Taku to 41 per 1,000 of the strength ; or it may be stated that this disease alone cut off one-twentieth of the whole force during the six months in which it prevailed.

Cholera broke out among the field force in May, the first case having been reported on the 22nd of that month, and did not cease till the middle of November. It appeared among the troops at Taku on the 18th of June. The disease was not confined to the military, but attacked all classes, Europeans and

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* See Description of Shanghai, at page 269 of the Report by the Head of the Sanitary Branch.

China.

natives, civil, military, and naval, and prevailed at almost all the large cities in the North of China.

Deputy Inspector-General Dr. Home, the Principal Medical Officer in China, says: "The ravages of the disease have not been confined to the country around Shanghai, but have extended along the North of China, crossing over to Manchuna, and extending down to Japan, where it has been represented as raging with a virulence equal to, if not exceeding, what has characterised its progress in China. . . . So fiercely did this frightful epidemic rage among the unfortunate Chinese, that it is estimated, on good authority, that between Shanghai and Scon-Kiang (distant about forty miles) about one-eighth of the population had died from cholera alone."

The only other class of diseases in which there was a marked difference from the results of 1861 was that of the respiratory system, which was considerably below the previous amount.

Accidents and Violence.—The heavy loss by disease recorded above forms a remarkable contrast with that inflicted on the troops by the enemy. Although in the course of the military operations already noticed four walled towns and an entrenched camp were captured, only three men fell in action, and eleven cases of gunshot wounds were admitted into hospital. The Royal Artillery, 67th, and 99th Regiments lost each one man.

II. Native or Asiatic Troops.

The average strength of these troops, who were all quartered at Shanghai, was 1,061; the admissions into hospital among them were 1,660, and the deaths 35, being in the proportion respectively of 1,564 and 32·98 per 1,000 of the strength. These ratios show a much greater sickness and mortality than occurred among Fane's Horse at Tien-tsin in 1861, but the comparison is defective in several important points. The following Table, prepared from Abstract No. XXIII. of Appendix, shows the influence of the different classes of diseases on these troops:—

Order.	Diseases.	Shanghai.			
		Strength, 1,061.		Ratio per 1,000.	
		Admitted.	Died.	Admitted.	Died.
	Class I.				
1	Miasmatic Diseases	1,217	24	1147·1	22·62
2	Enthetic ,, ...	72	..	67·9	..
3	Dietic ,, ...	3	..	2·8	..
4	Parasitic ,, ...	5	..	4·7	..
	Class II.				
1	Diathetic Diseases	6	1	5·7	·94
	Class III.				
	Diseases of the—				
1	Nervous System	15	..	14·1	..
3	Respiratory ,, ...	90	1	84·8	·94
4	Digestive ,, ...	68	2	64·1	1·89
5	Urinary ,, ...	1	..	·9	..
6	Reproductive ,, ...	1	..	·9	..
7	Locomotive ,, ...	3	1	2·8	·94
8	Integumentary ,, ...	94	..	88·6	..
	Class V.				
1	Accidents	72	2	67·9	1·89
2	Battle	12	1	11·3	·94
3	Homicide	..	1	..	·94
4	Suicide	..	1	..	·94
5	Execution	..	1	..	·94
6	Corporal Punishment	1	..	·9	..
	Total ..	1,660	35	1564·5	32·98

China. This Table shows miasmatic diseases to have been the chief source of sickness and mortality. When subdivided into groups, they give the following results :—

Diseases.	Admitted.	Died.	Ratio per 1,000 of Strength.	
			Admitted.	Died.
Eruptive Fevers	3	1	2·8	·94
Paroxysmal ,, ...	757	5	713·5	4·71
Continued ,, ...	14	..	13·2	..
Dysentery and Diarrhœa	287	3	270·5	12·83
Spasmodic Cholera	40	15	37·7	14·14
Sorethroat and Influenza	2	..	1·9	..
Ophthalmia	11	..	10·4	..
Rheumatism	101	..	95·2	..

This shows the greatest amount of sickness to have been caused by paroxysmal fevers, and next to them by dysentery and diarrhœa, while spasmodic cholera has been the chief cause of mortality, although the deaths by it amounted to only one-third of the proportion among the European troops. This comparative exemption from the epidemic was pointed out by the medical officers, but they state they are unable to assign any reason for it.

On comparing the results in this Table with those for the native troops in South China, it will be found that paroxysmal fevers and dysentery and diarrhœa were much more prevalent and fatal at Shanghai, and that the troops at Hong Kong enjoyed a complete exemption from the epidemic of cholera, which cut off so many men in the north.

The other classes of diseases scarcely require special notice. At Shanghai those of the integumentary system were twice as common as at Hong Kong, the difference being in abscesses and ulcers.

Accidents and Violence.—The Asiatic troops lost only one man in action, a private of the 5th Bombay Native Infantry. One man of the force was found murdered, one was executed for murder, and one committed suicide.

Section II.

On the extent of Invaliding.

There were 72 men of the European force sent to England, and 14 of the Asiatic to India, as invalids recommended for change of climate. The causes of invaliding are detailed in Abstract No. XXIV. of Appendix, from which the following summary has been prepared :—

	European Force.	Asiatic Force.		European Force.	Asiatic Force.
Ophthalmia	6	..	Diseases of the—		
Diarrhœa	5	..	Digestive System ..	3	2
Intermittent Fever ..	6	..	Locomotive ,, ..	2	..
Continued ,, ..	..	3	Integumentary ,, ..	1	..
Rheumatism	7	4	Diseases of Nutrition ..	20	..
Venereal	2	1	Accidents and Injuries ..	3	..
Tubercular diseases ..	4	..			
Diseases of the—			Total	72	14
Nervous System ..	3	4			
Circulatory ,, ..	3	..	Ratio per 1,000 of Strength .. 1862	20·5	8·1
Respiratory ,, ..	7	..	1861	63·8	8·0

This shows a great decrease in the numbers invalided from the European force. The chief cause of disability has been atrophy, probably the result of repeated attacks of paroxysmal fevers.

There were 103 invalids from the European force finally discharged the service at Fort Pitt and Woolwich during the year, for the following causes :—

Eye Diseases	15
Rheumatism and Chronic Pains	10
Venereal	9
Cachexy and Scrofula	5
Weakly Constitution and Debility	9
Mental Diseases	3
Paralysis	3
Cardiac Disease	11
Pulmonary „	15
Dysentery and Hepatic Disease	10
Hernia..	2
Stricture and Urinary Diseases	1
Contractions	2
Ulcers and Varices	1
Dislocations, Fractures, and Amputations	3
Wounds in Action	2
Worn out	2
Total	103
Ratio per 1,000 of Strength { 1862..	29·34
Ratio per 1,000 of Strength { 1859–61	8·98

There has been a considerable increase in the number discharged as invalids compared with the average of the three preceding years, but in 1859 and 1860 the number was unprecedentedly low. Pulmonary, cardiac, and ocular diseases have been, as in former years, the chief causes of disability.

SECTION III.

Mean Daily Sick.

The average number of European soldiers constantly non-effective from sickness was 97 in South and 135 in North China. The returns do not enable us to separate the native troops in this manner, but the average for that force in China generally was 78. From these data the following results are obtained :—

	European Force.		Asiatic Force.
	South China.	North China.	China generally.
Ratio per 1,000 of strength constantly sick ..	82·13	57·94	45·22
	Days.	Days.	Days.
Average sick time to each soldier	29·98	21·15	16·50
Average duration of cases of disease	16·83	11·25	14·34

These results accord pretty nearly with those for 1861, but show a reduction both in the north and the south. The only striking difference is in the duration of the cases, which formerly was nearly alike in the two divisions, and it may be accounted for by the rapidity with which the cholera cases run their course. The high ratio of sick and longer duration of cases at Hong Kong may have been partly due to the invalids being sent from the north to Hong Kong previous to embarkation for England. The results for the Asiatic troops closely approximate those for the same class in North China in 1861.

SECTION IV.

On the Influence of Age on the Mortality.

China. The following Table, prepared from Abstract No. XXVI. of Appendix, shows the numbers serving, and the deaths at each age in quinquennial periods :—

	Under 20.	20–24.	25–29.	30–34.	35–39.	40 and upwards.
Strength on 1st January. .	32	1,518	1,063	575	191	7
Deaths during year . .	. .	105	119	62	45	3
Ratio of deaths per 1,000 of Strength :						
1862	. .	69·17	111·95	107·83	235·61	428·57
1861	6·76	30·22	50·92	52·63	41·18	142·86

This Table shows a great increase in the mortality with the advance of age. The numbers are too few to insure regularity in the results, but it is evident that the younger soldiers suffered to a less extent from the epidemic than those more advanced in years.

No returns were received of the ages of the Asiatic troops.

XII. ON THE HEALTH OF THE TROOPS SERVING IN INDIA.

Section I.

Sickness and Mortality.

India.

The information respecting the health of the troops in Madras and Bombay has been taken chiefly from the general returns furnished by the principal Medical Officers of these two Presidencies. The general return for Bengal not having been received, and the quarterly returns being still in arrear, the information for that Presidency has been compiled from the annual returns furnished by each regiment, copies of which had been forwarded in accordance with instructions from this Department. The return of one regiment only—the 1st Battalion 13th, is wanting; but, with that exception, it is believed the whole of Her Majesty's European regiments are included in the general abstracts.

The average strength in India of these troops during the year was 63,713 non-commissioned officers and men, among whom there were 110,584 admissions into hospital, and 1,517 deaths. In addition to the latter, 119 occurred among invalids on their passage to, or while awaiting their discharge at the invalid depôts in England, making the total 1,636. These numbers give the ratio of 1,736 admissions and 25·68 deaths per 1,000 of mean strength, the former being a trifle, and the latter nearly one-third, under the proportion in 1861.

The sickness and mortality in each of the three Presidencies was as follows :—

	Average Strength.	Admissions into Hospital.	Deaths.			Ratio per 1000 of Mean Strength.			
						1862.		1860–61.	
			In India.	Of Invalids.	Total.	Admitted.	Died.	Admitted.	Died.
Bengal	39,312	72,791	1,011	72	1,083	1851·7	27·55	1990·2	42·27
Madras	12,531	16,213	232	29	261	1293·8	20·83	1370·2	19·22
Bombay	11,870	21,580	274	18	292	1818·1	24·60	1860·2	28·64

This Table shows a decrease in the admissions into hospital in all the Presidencies, but most marked in Bengal. The mortality in Bengal has been one-third below the average of the two preceding years; in Bombay it has also undergone a reduction, but in Madras it has been very slightly above the average.

The following Table shows the influence of the different classes of diseases upon the sickness and mortality. The details for 1862 are given in Abstract No. XXVII. of Appendix.

India.

Order.	Diseases.	Bengal.								Madras.								Bombay.							
		Average Strength, 39,312.				Ratio per 1,000 of MeanStrength, 1862.		Ratio per 1,000 of MeanStrength, 1860-61.		Average Strength, 12,531.				Ratio per 1,000 of MeanStrength, 1862.		Ratio per 1,000 of MeanStrength, 1860-61.		Average Strength, 11,870.				Ratio per 1,000 of MeanStrength, 1862.		Ratio per 1,000 of MeanStrength, 1860-61.	
			Died.								Died.								Died.						
		Admitted.	In India.	Of Invalids.	Total.	Admitted.	Died.	Admitted.	Died.	Admitted.	In India.	Of Invalids.	Total.	Admitted.	Died.	Admitted.	Died.	Admitted.	In India.	Of Invalids.	Total.	Admitted	Died.	Admitted.	Died.
	Class I.																								
1	Miasmatic Diseases ...	42,787	596	15	611	1,088·4	15·54	1,126·7	29·42	6,151	88	4	92	490·9	7·34	612·8	8·58	12,121	150	5	155	1,021·2	13·05	1,064 6	17·43
2	Enthetic ,, ...	12,101	9	3	12	307·7	·30	357·5	·32	3,687	3	...	3	294·2	·24	254·2	·42	3,586	2	1	3	302·1	·42	326·2	·34
3	Dietic ,, ...	380	2	1	3	9·7	·08	8·7	·04	303	2	...	2	24·2	·16	13·0	·09	336	4	...	4	28·3	·34	11·2	·10
4	Parasitic ,, ...	254	...	...	...	6·5	...	6·4	...	76	...	...	...	6·1	...	10·3	...	123	...	...	...	10·4	...	13 2	...
	Class II.																								
1	Diathetic Diseases ...	314	10	1	11	8·0	·28	5·0	·19	69	2	...	2	5·5	·16	4·8	·19	76	4	1	5	6·4	·42	7·4	·05
2	Tubercular ,, ...	404	68	25	93	10·3	2·37	11·6	2·54	185	19	8	27	14·8	2·15	16·4	1·73	107	12	2	14	9·0	1·18	9·8	1·73
	Class III. Diseases of the—																								
1	Nervous System ...	1,196	60	4	64	30·4	1·63	35·7	2·60	429	29	1	30	34·2	2·39	31·5	1·12	361	17	1	18	30·4	1·35	34·3	1·53
2	Circulatory ,, ...	291	20	2	22	7·4	·56	11·7	·65	190	21	4	25	15·2	1·99	15·4	·84	163	5	...	5	13·7	·42	10·2	·59
3	Respiratory ,, ...	1,753	34	...	34	44·6	·86	62·4	1·13	536	6	...	6	42·8	·48	51·8	·65	476	10	1	11	40·1	·93	58·0	·99
4	Digestive ,, ...	5,066	144	2	146	128·9	3·71	146·0	3·92	1,513	37	2	39	120·7	3·11	135·3	3·59	1,535	40	3	43	129·3	3 63	117·9	3·65
5	Urinary ,, ...	101	5	1	6	2·6	·15	2·2	·14	30	1	...	1	2·4	·08	2·2	·23	40	1	...	1	3·4	·08	2·7	·05
6	Reproductive ,, ...	679	1	...	1	17·3	·03	7·2	01	256	...	...	...	20·4	...	7·3	...	154	...	...	...	13·0	...	5·5	...
7	Locomotive ,, ...	192	...	...	...	4·9	...	5·5	·04	72	...	...	...	5·7	...	4·0	·05	57	...	...	...	4·8	...	4·2	...
8	Integumentary ,, ...	3,937	1	1	2	100·1	·05	112 2	·08	1,295	2	...	2	103·3	·16	108·6	·19	1,215	1	...	1	102·4	·08	101·9	·05
	Class IV.																								
4	Diseases of Nutrition	215	3	...	3	5·5	·07	9·7	·16	72	2	2	4	5·8	·33	5·1	·14	51	1	1	2	4·3	·17	5·2	...
	Class V.																								
1	Accidents	3,043	39	2	41	77·4	1·04	72·7	·58	1,304	19	...	19	104·1	1·52	83·8	1·12	1,162	18	...	18	97·9	1·52	83·6	1·78
2	Battle	...	...	...	...	...	...	...	·01	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Homicide	1	2	...	2	...	·05	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	Suicide	4	14	...	14	·1	·36	·1	·12	...	...	...	...	...	...	...	·09	1	9	...	9	·1	·76	...	·10
5	Executio	...	1	...	1	...	·03	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	·05
	Corporal Punishment	41	...	...	...	1·0	...	1·0	...	32	...	...	...	2·5	...	·8	...	13	...	...	...	1·1	...	1·2	...
	Diseases not specified	35	2	15	17	·9	·43	7·9	·32	13	1	8	9	1·0	·72	12·9	·19	3	...	3	3	·2	·25	3·1	·20
	Total	72,791	1,011	72	1,083	1,851·7	27·55	1,990·2	42·27	16,213	232	29	261	1,293·8	20·83	1,370·2	19·22	21,580	274	18	292	1,818·1	24·60	1,860 2	28·64

The decrease in the ratio both of the sickness and the mortality has taken place chiefly in miasmatic diseases. In Bengal and Bombay there has also been a considerable reduction in the amount of venereal. *India.*

MIASMATIC DISEASES, when subdivided into the usual groups, give the following results :—

	Bengal.		Madras.		Bombay.		Ratio per 1000 of Mean Strength.											
							Bengal.				Madras.				Bombay.			
							1862.		1860–1.		1862.		1860–61.		1862.		1860–61.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitteed.	Died.
Eruptive Fevers	22	2	22	1	14	2	·6	·05	4 ·7	·61	1 ·7	·08	·6	·05	1 ·2	·17	2 ·6	·35
Paroxysmal ,, ...	23,732	73	2,156	7	7,545	25	603 ·7	1 ·86	470 ·4	2 ·39	172 ·0	·56	189 ·0	1 ·03	635 ·6	2 ·11	543 ·2	2 ·32
Continued ,, ...	6,174	58	602	8	1,242	14	157 ·0	1 ·47	230 ·9	2 ·19	48 ·0	·64	125 ·5	·93	104 ·6	1 ·18	175 ·4	2 ·02
Dysentery and Diarrhœa ..	6,050	130	1,700	24	1,590	52	153 ·9	3 ·31	148 ·2	5 ·62	135 ·7	1·91	169 ·1	2 ·28	133 ·9	4 ·38	174 ·4	4 ·79
Spasmodic Cholera ..	520	323	88	46	78	55	13 ·2	8 ·21	29 ·7	17 ·63	7 ·0	3 ·67	7 ·2	3 ·08	6 ·6	4 ·63	11 ·3	6 ·91
Sorethroat and Influenza ..	817	1	166	..	206	1	20 ·8	·03	21 ·6	·03	13 ·2	..	13 ·7	..	17 ·3	·08	22 ·7	..
Ophthalmia	2,184	..	384	..	611	..	55 ·5	..	76 ·2	..	30 ·6	..	35 ·5	..	51 ·5	..	64 ·9	..
Rheumatism	2,811	2	861	1	713	..	71 ·5	·05	75 ·5	·09	68 ·7	·08	66 ·1	..	60 ·1	..	63 ·6	..

India. *Eruptive Fevers* have not prevailed to any extent during 1862. The deaths were all caused by small-pox.

Paroxysmal Fevers were more prevalent than during the two preceding years in Bengal and Bombay, but slightly under the average in Madras. In all three, however, there was a reduction in the mortality.

Continued Fevers were considerably under the previous average in all the Presidencies, both as regards sickness and mortality, except in Bombay, where the deaths show a very slight increase.

Dysentery and *Diarrhœa*.—The admissions by these diseases in Bengal were a little over, but the deaths considerably under, the average. In the other Presidencies there was a decrease in both admissions and deaths.

Spasmodic Cholera is the disease in which the great reduction of mortality in Bengal has taken place, the deaths by it in 1862 having amounted to only one-third of the proportion in 1861, and one half of the average of the two years 1860 61. In Madras the mortality was 1 per 1,000 higher, and in Bombay nearly 1 per 1,000 lower, than in 1861.

Ophthalmia.—The admissions by this disease show a decrease upon the average of the two preceding years in all the Presidencies.

Dietic Diseases have furnished a larger proportion of admissions in all the Presidencies, the excess being in cases of intemperance (*ebriositas*). In Bombay there has been an increase also in the amount of scurvy.

Sunstroke or Heat Apoplexy has given rise to a much higher proportion, both of admissions and deaths, than in 1861; the cases amounted to 96, of which 30 terminated fatally.

Accidents, Violence, &c.—In this class a death from starvation is recorded; it was that of a corporal of the 54th Regiment, who deserted, taking with him some public money, and who, after living on berries in the woods for some time, was found in a dying state from starvation near Nynee Tal. A death from lightning also occurred in the Bengal Presidency, and one from snake bite, but of the latter no particulars are given.

We shall now submit some details respecting the sickness and mortality in each of the Presidencies.

I. Bengal.

Bengal. The quarterly returns from this Presidency, for the latter half of 1862, have unfortunately not been received, and we are in consequence unable to give the same information as in former Reports respecting the sickness and mortality at the principal stations in Bengal. The numerous changes of quarters which took place during the year render it impossible to prepare a correct statement of the health of the troops at the different stations from the annual returns of the regiments from which the general abstract was compiled.

Although, as has been already stated, cholera gave rise to only one-third of the proportion of deaths which it had occasioned in 1861 it still remains the chief cause of mortality in this Presidency. In 1862, of a total of 1,011 deaths which occurred in Bengal, 326, or nearly one-third, were the result of this disease. It was by no means so wide-spread as in the preceding year, nor did it prevail to such an extent at those stations in which it became epidemic. But its fatal character appears to have undergone no modification, the proportion of deaths to cases having been 1 in 1·61, or identical with that in 1862.

The following Table shows the stations at which the disease may be said to have been epidemic. The strength has been taken from the general monthly returns furnished to the War Office :—

Bengal.

Military Divisions.	Stations.	Strength on 1st August.	Cases of Cholera.	Deaths by Cholera.	Ratio per 1,000.	
					Cases.	Deaths.
Presidency ..	Fort William ..	948	19	15	20·04	15·82
Gwalior ..	Jhansi*	1,107	38	29	34·33	26·20
Meerut ..	Agra	1,253	66	49	52·67	39·11
	Meerut	2,121	51	30	24·04	14·14
Lahore ..	Meean Meer ..	1,269	134	70	105·60	55·16
	Umritsir ..	178	16	10	89·89	56·18
	Ferozepore ..	1,385	17	12	12·27	8·66
	Sealkote.. ..	1,639	14	10	8·54	6·10
Peshawur ..	Peshawur ..	1,396	127	84	90·97	60·17

It will be seen from this Table that the highest proportion of cases occurred at Meean Meer, which suffered so greatly from the epidemic of the preceding year, and of deaths, at Peshawur, which escaped on that occasion.

In accordance with a General Order,† as soon as cholera appeared at any station among the troops, they were moved into camp, and if the disease still continued among them, the camp was moved every second or third day, and they did not return to cantonments until cholera had disappeared from the neighbourhood. In the preceding Table the cases and deaths which occurred at the various camps have been included in the return of the stations occupied by the troops when the disease appeared.

The corps in which cholera occurred as an epidemic are shown in the following Table. The strength has been taken, as in the preceding, from the general monthly return; that of the Royal Artillery includes only the batteries serving at the various stations at which cholera prevailed.

Regiments, &c.	Strength on 1st August.	Cases of Cholera.	Deaths by Cholera.	Ratio per 1000 of Strength.	
				Cases.	Deaths.
Royal Artillery	2,033	74	48	36·40	23·61
7th Dragoon Guards	602	6	3	9·97	4·98
8th Hussars	635	1	1	1·57	1·57
1st Battalion 7th Foot	1,217	16	11	13·15	9·04
„ 19th „	956	131	68	137·33	71·13
35th Foot	1,174	66	49	56·22	41·74
52nd „	986	38	29	38·54	29·41
71st „	906	4	4	4·41	4·41
92nd „	948	19	15	20·04	15·82
93rd „	990	93	60	93·94	60·61
104th „	849	34	21	40·05	24·74

The 19th Regiment, at Meean Meer, had the greatest number of cases and deaths, and next to it the 93rd, at Peshawur. A detailed report of the epidemic, by Dr. Munro, surgeon of the latter regiment, will be found at p. 406 of this volume.

We are unable, from want of the necessary documents, to give more detailed information respecting the prevalence of the various classes of diseases at the different stations. There is every reason to hope that this defect will not exist in the next annual Report. In the mean time, we can only show the amount of sickness and mortality which occurred in each corps serving in the Presidency during the year, with the exception of the 1st Battalion 13th Foot.

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* Cholera prevailed as an epidemic also at Morar in the 1st Battalion 13th Regiment, but we have been unable to include the details for this corps, in consequence, as already stated, of the return from it not having been received. During the three months of July, August, and September, this regiment, out of an average strength of 934, lost 48 men, but we are unable at present to say how many of those deaths were from cholera.

† The General Order here referred to will be found at p. 330 of the Report by the Head of the Sanitary Branch.

Bengal.

Corps.	Average Strength during the Year.	Admitted into Hospital.	Died.			Ratio per 1,000 of Mean Strength.		Stations during the Year.
			In India.	Invalids on board Ship and at Home.	Total.	Admitted.	Died.	
ROYAL ARTILLERY.								
A Battery, 2nd Brigade, R. H. A. ..	131	286	4	..	4	2,183	30·53	Sultanpore, ½ month; Benares, 11 months; on march, ½ month.
B ,, 2nd ,, ,, ..	113	208	7	..	7	1,811	61·95	Sealkote, 10 months; on march, 2 months.
D ,, 2nd ,, ,, ..	106	343	2	..	2	3,236	18·87	Saugor, 1½ months; Jubbulpore, 8 months; on march, 2½ months.
D ,, (late) 2nd ,, ,, ..	120	355	6	..	6	2,958	50·00	Meerut, 11 months (then disembodied).
E ,, 2nd ,, ,, ..	110	511	13	..	13	4,918	118·19	Umballa, 1 month; on march, 2 months; Peshawur, 9 months.
F ,, 2nd ,, ,, ..	121	212	3	..	3	1,752	24·79	Cawnpore, 2 months; Allahabad, 8 months; Lucknow, 2 months.
A ,, 5th ,, ,,	210	824	3	..	3	3,924	14·28	Rawul Pindee .. .. .. Whole year.
F ,, 5th ,, ,,								Peshawur, 3 months; Rawul Pindee, 9 months.
B ,, 5th ,, ,, ..	119	294	3	..	3	2,471	25·21	On march, 2½ months; Meerut, 9½ months.
C ,, 5th ,, ,,	124	488	6	..	6	3,935	48·39	Peshawur, 1½ months; on march, 1½ months; Umballa, 9 months.
Head Quarters, 5th ,, ,,								Umballa .. .. Whole year.
E Battery 5th ,, ,, ..	116	280	9	..	9	2,414	77·59	Meean Meer .. .. .. ,,
A ,, 11th Brigade, R.A. ..	169	251	1	..	1	1,485	5·92	Bareilly .. .. ,,
B ,, 11th ,, ,, ..	182	240	1	..	1	1,319	5·49	Fyzabad, 10 months; Lucknow, 2 months.
C ,, 11th ,, ,, ..	165	199	7	1	8	1,206	48·48	Mooltan, 2 months; Ferozepore, 7 months; on march, 3 months.
D ,, 11th ,, ,, ..	146	522	15	..	15	3,575	102·74	Peshawur, 1 month: Umritsir, 8 months; on march, 2½ months; Bareilly, ½ month.
E ,, 11th ,, ,, ..	202	270	3	..	3	1,337	14·85	Lucknow .. .. Whole year.
F ,, 11th ,, ,, ..	149	305	2	..	2	2,047	13·42	Setapore, 10 months; on march, 1 month; Meerut, 1 month.
Head Quarters, 14th ,, ,, ..	43	60	..	..	..	1,395	..	Barrackpore .. .. .. Whole year.
A Battery 14th ,, ,, ..	206	187	9	2	1	721	53·40	Hazareebaugh, 11 months; on march, 1 month.
D ,, 14th ,, ,, ..	143	249	1	..	1	1,741	6·99	Allahabad, 11½ months; on march and Barrackpore, ½ month.
E ,, 14th ,, ,, ..	173	185	5	..	5	1,069	28·90	Roy Bareilly, 10 months; Allahabad, 1 month; on march and Barrackpore, 1 month.
F ,, 14th ,, ,, ..	186	355	4	..	4	1,908	21·50	Roy Bareilly, ½ month; on march, 2 months; Barrackpore, 9½ months.

H ,, 14th ,, ,, ..	146	150	2	..	2	1,027	13·70	Benares .. .. Whole year.
H ,, (det.) 14th ,, ,, ..	19	12	..	..	..	631	..	Calcutta, 2 months.
A ,, 19th ,, ,, ..	64	237	9	..	9	3,703	140·63	Umritsur, and on march 1½ months; Peshawur, 10½ months.
C ,, 19th ,, ,, ..	91	373	9	..	9	4,099	98·90	Rawul Pindee, and on march 1½ months; Peshawur, 10½ months.
A ,, 22nd ,, ,, ..	119	250	1	..	1	2,101	8·40	Cawnpore, 10 months; on march, ½ month; Delhi, 1½ months.
D ,, 22nd ,, ,, ..	70	205	..	..	..	2,928	..	Meerut .. .. .. Whole year.
E ,, 22nd ,, ,, ..	73	140	1	..	1	1,918	13·70	Lucknow, 10½ months; on march, ½ month; Jhansi, 1 month.
B ,, 24th ,, ,, ..	82	349	3	..	3	4,256	36·58	On march, 1 month; Peshawur, 11 months.
E ,, 24th ,, ,, ..	92	176	4	..	4	1,913	43·48	Lucknow .. .. .. Whole year.
F ,, 24th ,, ,, ..	48	152	2	..	2	3,167	41·67	Meerut.. .. .. .. ,,
Head Quarters, 25th ,, ,, ..	78	158	2	..	2	2,026	25·64	Agra .. .. ,,
A Battery 25th ,, ,, ..	41	94	1	..	1	2,293	24·39	Delhi .. .. ,,
Regimental Band	54	133	1	..	1	2,463	18·52	Meerut.. .. .. .. ,,
R.A. (Brigade not specified)	..	..	..	9	7	..	..	
Total Royal Artillery	4,011	9,083	139	12	151	2,264	37·15	
CAVALRY.								
2nd Dragoon Guards	440	593	4	..	4	1,348	9·09	Lucknow, 1 month; on march, ½ month; Benares and Cawnpore, 10½ months.
7th ,, ,, ...	613	662	11	3	14	1,080	22·83	Sealkote, 10½ months; on march and at Umballa, 1½ months.
7th Hussars	645	917	6	1	7	1,422	10·85	Umballa, 11½ months; on march, ½ month.
8th ,, ...	637	536	10	..	10	841	15·70	Meerut .. .. Whole year.
19th ,, ...	353	541	1	..	1	1,532	2·83	Cawnpore, 1 month; Lucknow, 11 months.
20th ,, ...	504	1,058	6	..	6	2,099	11·90	Muttra, 10 months; on march, 2 months.
Total Cavalry	3,192	4,307	38	4	42	1,349	13·16	
INFANTRY.								
7th Foot, 1st Battalion	1,233	1,956	31	4	35	1,586	28·39	Peshawur, 1 month; Nowshera, 1 month; on march 1 month; Ferozepore and Meean Meer, 9 months.
13th ,, ,, ...	..	No returns received.					..	

Corps.	Average Strength for the Year.	Admitted into Hospital.	Died.			Ratio per 1000 of Mean Strength.		Stations during the Year.
			In India.	Invalids on board Ship and at Home.	Total.	Admitted.	Died.	
19th Foot, 1st Battalion	758	1,887	90	4	94	2,489	122·69	On march, 2 months; Meean Meer, 10 months.
20th ,, ,, ...	951	1,609	42	..	42	1,692	44·16	Goruckpore, 1 month { (Right wing) Benares, 11 months. (Left wing) Goruckpore, 9 months; Azimghur, 2 months.
23rd ,, ,, ...	1,117	1,245	7	2	9	1,114	8·06	Fyzabad, 11½ months; on march, ½ month.
27th ,, ...	849	1,895	11	..	11	2,232	12·95	On march, one month; Gondah, 11 months.
34th ,, { Head Quarters	453	723	8	1	11	1,596	12·75	Setapore .. .. .. Whole year.
34th ,, { Left Wing	410	546	2			1,332		Roy Bareilly .. .. .. ,,
35th ,, ...	1,140	2,704	70	5	75	2,371	65·79	Agra, 11⅔ months; on march ⅓ month.
38th ,, ...	561	1,099	7	3	10	1,959	17·83	Dinapore.. .. .. .. Whole year.
42nd ,, ...	903	1,163	26	..	26	1,288	28·79	Umballa, 3 months; Dugshai, 9 months.
43rd ,, ...	921	1,406	18	6	24	1,527	26·06	Madras, 1½ months; Calcutta, 1½ months; Barrackpore, 9 months.
46th ,, ...	994	1,617	22	..	22	1,627	22·13	On march, ½ month; Cawnpore, 11½ months.
48th ,, ...	944	1,147	23	1	24	1,215	25·42	Lucknow .. .. .. Whole year.
51st ,, ...	827	1,565	16	..	16	1,892	19·35	Rawul-Pindee .. .. .. ,,
52nd ,, ...	621	2,113	49	1	50	3,403	78·90	Jhansi, 11 months; on march, 1 month.
54th ,, ...	988	1,732	14	..	14	1,753	14·17	{ (Right wing) Roorkee .. .. Whole year. (Left wing) Cawnpore, ½ month; on march, 1 month; Moradabad, 10½ months.
71st ,, ...	920	1,396	7	2	9	1,517	9·78	Sealkote, 10 months; on march, ⅔ month; Nowshera, 1⅓ months.
75th ,, ...	141	161	3	3	6	1,142	42·55	Calcutta, 2 months (embarked for England).
77th ,, ...	902	575	11	1	12	637	13·30	Hazareebaugh, 10½ months; on march, 1 month; Allahabad, ½ month.
79th ,, ...	1,003	1,657	9	2	11	1,652	10·97	Ferozepore, 1½ months; on march, 1 month; Nowshera, 8 months; Peshawur, 1½ months.
30th ,, ...	979	2,378	13	4	17	2,429	17·36	Saugor and Nowgong, 10½ months; Jhansi, 1½ months.

Bengal.

81st „	616	803	14	..	14	1,303	22·73	On march ⅔ month; Jullundur, 9⅓ months; on march, 2 months.
82nd „	1,086	2,225	36	1	37	2,049	34·07	Delhi .. .. Whole year.
88th „ Right Wing	527	595	7	1	12	1,129	12·90	Shahjehanpore .. .. „
88th „ Left Wing	403	615	4			1,526		Moradabad, 1 month; on march ½ month; Futtyghur, 10½ months.
89th „	996	2,289	7	..	7	2,298	7·03	Umballa, 10 months; on march, 1 month; Mooltan, 1 month.
90th „	912	1,977	18	2	20	2,168	21·93	Allahabad, 11½ months; on march, ½ month.
92nd „	967	1,236	30	4	34	1,278	35·16	On march, ⅔ month; Benares, 2 months; Calcutta, 9⅓ months.
93rd „	1,007	2,595	79	..	79	2,577	78·45	Peshawur, 9½ months; camp, 2½ months.
94th „	730	1,274	5	2	7	1,745	9·59	Meean Meer, 2 months; Jullundur, 10 months.
97th „	928	2,413	22	1	23	2,600	24·78	Jubbulpore .. .. .. Whole year.
98th „	1,022	3,010	22	1	23	2,945	22·50	Rawul-Pindee .. Whole year. (Detachment at Fort Attock and Campbellpore.)
101st „	1,032	3,320	22	..	22	3,217	21·32	Mooltan, 11½ months; on march, ½ month.
104th „	824	1,693	34	..	34	2,054	41·26	Meerut .. .. .. Whole year.
107th „	373	1,267	12	1	13	3,397	34·85	Lucknow, 11 months; Fyzabad, 1 month.
Rifle Brigade, 2nd Battalion	1,039	1,068	11	2	13	1,028	12·51	Subathoo .. .. .. Whole year.
Ditto, 3rd „	998	773	14	2	16	774	16·03	Bareilly .. .. .. „
Total Infantry	31,075	57,727	816	56	872	1,858	28·09	

Nineteen deaths which occurred at the convalescent depôts are unavoidably omitted from this Table, as the regiments to which the men belonged have not been stated.

Bengal. From this Table it appears that the sickness and mortality were highest in the Royal Artillery, and lowest in the Cavalry. The 11th and 14th Brigades of Artillery had been sent out to India on the outbreak of the mutiny, while the other brigades had constituted part of the Indian Army, and were amalgamated with the Royal Army in the beginning of 1862. The latter, therefore, were composed of men who had been enlisted for and passed the whole of their previous service in India. The average strength of the two brigades was 1,929, and they furnished 2,985 admissions into hospital, and 50 deaths, exclusive of those of invalids, while the average strength of the other brigades was 2,082, and the admissions from them amounted to 6,098, and the deaths to 89. These numbers give the proportion of 1,547 admissions and 25·92 deaths per 1,000 of the strength in the 11th and 14th Brigades, and 2,929 admissions, and 42·75 deaths in the others. The E Battery, 2nd Brigade, R. H. A., which was stationed for the greater part of the year at Peshawur, furnished the highest proportion of cases, and the A Battery, 19th Brigade, also at Peshawur, of deaths. The sickness was extremely high in the D Battery, 11th Brigade, the A and C Batteries, 19th Brigade, and the B Battery, 24th Brigade, at Peshawur; in the A and F Batteries, 5th Brigade, R. H. A., at Rawul Pindee, and in the C Battery, at Umballa. The mortality was excessive in the E Battery, 2nd Brigade, R. H. A., as already stated, and the A and C Batteries, 19th Brigade, at Peshawur; in the E Battery, 5th Brigade, R. H. A., at Meean Meer, and in the D Battery, 11th Brigade, at Umritsir.

In the Cavalry the admissions were highest in the 20th Hussars, at Muttra, and the deaths, in the 7th Dragoon Guards, at Sealkote, but the latter only amounted to 23 per 1,000 of the strength.

In the Infantry the highest ratio of sickness occurred in the 52nd Regiment, at Jhansi, and of mortality, in the 19th, at Meean Meer. The admissions were very high also in the 107th Regiment, at Lucknow, the 101st, at Mooltan, the 98th, at Rawul Pindee, the 97th, at Jubbulpore, the 93rd, at Peshawur, the 19th, at Meean Meer, and the 80th, at Saugor and Nowgong. The proportion of deaths was in excess even of the ratio of 1861, in the 19th, at Meean Meer, the 52nd, at Jhansi, the 93rd, at Peshawur, and the 35th, at Agra.

In consequence, however, of the numerous changes in the quarters of the regiments, it is impossible to allot correctly from these returns the proportion of sickness and mortality due to the different stations, and it seems unadvisable, therefore, to enter into further details. We hope to be able on a future occasion to supply the information which is at present deficient.

II. MADRAS.

Madras. In the present Report we are unable to show the sickness and mortality at the several stations in the Command separately, in consequence of defects in the quarterly returns. From an examination of the regimental returns, however, it appears that at none of the stations has either been greatly in excess of the average, with the exception of the mortality at Bangalore and Fort St. George, but even at these, though above the average of the Command, it did not amount to 30 per 1,000.

Cholera does not appear to have prevailed as an epidemic among the European troops, except at Bellary and Kamptee. At the former it broke out in May, affecting chiefly the 74th, and at the latter in September, in the 91st Regiment.

The following Table shows the sickness and mortality in each of the corps serving in Madras :—

Corps.	Average Strength during the Year.	Admitted into Hospital.	Died.			Ratio per 1,000 of Mean Strength.		Stations during the Year.
			In India.	Invalids on Board Ship, and at Home.	Total.	Admitted.	Died.	
ROYAL ARTILLERY.								
B Battery, 3rd Brigade, R. H. A. ..	108	190	..	..	..	1,759	..	Secunderabad .. .. Whole Year
C ,, 3rd ,, ,, ..	149	242	..	..	..	1,624	..	Bangalore .. .. ,,
D ,, 3rd ,, ,, ..	147	257	..	..	..	1,748	..	Bellary .. .. ,,
2nd ,, 13th Brigade, R. A. ..	177	213	4	..	4	1,203	22·60	Secunderabad .. .. ,,
C ,, 14th ,, ,, ..	178	254	2	..	2	1,427	11·24	Secunderabad .. .. ,,
Head Quarters, 17th Brigade, R. A..	364	446	11	..	11	1,225	30·22	St. Thomas's Mount .. .. .. ,,
3rd Battery, 17th Brigade, R. A. ..	76	116	1	..	1	1,526	13·16	Cannanore .. .. ,,
5th ,, 17th ,, ,, ..	123	216	6	..	6	1,760	48·78	Secunderabad .. .. ,,
1st ,, 20th ,, ,, ..	82	113	..	..	..	1,378	..	Rangoon .. .. ,,
2nd ,, 20th ,, ,, ..	135	163	4	..	4	1,207	29·63	Waltair .. .. ,,
3rd ,, 20th ,, ,, ..	118	275	2	..	2	2,330	16·95	Trichinopoly .. .. ,,
1st ,, 23rd ,, ,, ..	89	86	4	..	4	966	44·94	Bangalore .. .. ,,
2nd ,, 23rd ,, ,, ..	122	161	1	..	1	1,320	8·19	Bangalore, 2 months; on march, 1 month; Jaulnah, 9 months.
5th ,, 23rd ,, ,, ..	139	173	1	..	1	1,245	7·19	Bellary .. .. Whole Year
Various Detachments	355	524	16	..	16	1,476	45·07	Kamptee .. .. ,,
Royal Artillery, Brigade not specified	..	..	..	2	2	..	..	
Total Royal Artillery ..	2,362	3,429	52	2	54	1,452	22·86	
CAVALRY.								
1st Dragoon Guards	647	399	9	1	10	617	15·45	Bangalore .. .. Whole Year
17th Lancers	616	966	10	2	12	1,568	19·48	Secunderabad .. .. ,,
Total Cavalry	1,263	1,365	19	3	22	1,081	17·42	

Corps.	Average Strength during the Year.	Admitted into Hospital.	Died.			Ratio per 1,000 of Mean Strength.		Stations during the Year.
			In India.	Invalids on Board Ship and at Home.	Total.	Admitted.	Died.	
INFANTRY.								
1st Foot, 1st Battalion	983	1,031	12	5	17	1,049	17·29	Secunderabad, $11\frac{1}{2}$ months; on march $\frac{1}{2}$ month.
18th ,, 1st ,, ...	966	677	13	1	14	701	14·49	Secunderabad .. .. Whole Year
43rd ,, ...	94	96	..	..	..	1,021	..	Madras, $1\frac{1}{2}$ months; embarked for Bengal.
60th ,, 3rd Batt. Right Wing ..	440	555	8	3	25	1,261	25·43	Madras, $\frac{1}{3}$ month; on march, $1\frac{2}{3}$ months; Tonghoo, 10 months.
60th ,, 3rd Batt. Left Wing ..	543	461	14			849		Wellington, $\frac{2}{3}$ month; on march, 1 month; Madras, $\frac{2}{3}$ month; Rangoon, $\frac{1}{3}$ month; Thyetmyo, $9\frac{1}{3}$ months.
66th ,, ...	1,009	1,125	10	4	14	1,115	13·87	Cannanore .. .. Whole Year
68th ,, ...	1,017	786	7	..	7	773	6·88	Rangoon .. .. ,,
69th ,, ...	915	1,604	22	2	24	1,753	26·23	(Right wing), on march, $1\frac{1}{3}$ months; Madras, $10\frac{2}{3}$ months. (Left wing), Tonghoo, 2 months, on march, 1 month; Madras, 9 months. Detachments at Poonamallee and Wellington.
74th ,, ...	831	1,105	32	5	37	1,330	44·52	Bellary .. .. Whole Year
91st ,, ...	984	1,683	21	4	25	1,710	25·41	Kamptee .. .. ,,
102nd ,, ...	345	435	5	..	5	1,261	14·49	Bangalore, 6 months.*
105th ,, ...	310	643	4	..	4	2,074	12·90	Trichinopoly, 6 months.*
108th ,, ...	108	88	4	..	4	815	37·04	Jaulnah, $5\frac{1}{2}$ months; on march, $\frac{1}{2}$ month.*
Total Infantry	8,545	10,289	152	24	176	1,204	20·60	

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* Amalgamated with Her Majesty's Army on 1st July, 1862.

Madras. From this it appears that, as in Bengal, the highest ratio, both of sickness and mortality, has been in the Artillery, and the lowest in the Cavalry. In the Infantry the deaths were most numerous in the 74th, at Bellary; they were also in excess of the average in the 3rd Battalion 60th Rifles, in Burmah, the 69th, at Madras and Wellington, and the 91st, at Kamptee. The strength of the 108th, in which the mortality was excessive, was very small, and the returns from it extend over only the latter half of the year.

We hope in next Report to be able to give full information with regard to the health of the troops at Trichinopoly, Jaulnah, and Waltair, stations occupied by Her Majesty's troops since the amalgamation of the Indian with the Royal Army.

III. Bombay.

Bombay. In consequence of the returns for the first two quarters of 1862 being defective, we are unable to show the amount of sickness and mortality at each of the stations occupied by troops in this Presidency.

The only stations at which cholera appears to have prevailed as an epidemic among the European troops were Ahmednuggur and Neemuch. At the former it broke out about the middle of May, in the 3rd Dragoon Guards, causing 13 admissions into hospital and 10 deaths between the 14th and 25th of the month, and then ceased. At Neemuch it appeared in the middle of August, and prevailed till the end of September. During that period there were 4 cases, and 3 deaths in the 4th Battery 21st Brigade Royal Artillery, and 15 cases, of which 11 terminated fatally, in the 106th Regiment. Four deaths also occurred in a detachment of the 33rd Regiment, on its march from Surat to join the head-quarters at Bombay. Cholera was very prevalent among the native population at Surat, when the detachment left that station.

The following Table shows the admissions into hospital, and deaths by all causes, in the different corps serving in the Bombay Presidency. The necessary correction has been made in the strength of those which were in India during part of the year only.

Corps.	Average Strength for the Year.	Admitted into Hospital.	Died.			Ratio per 1,000 of Mean Strength.		Stations during the Year.
			In India.	Invalids on Board Ship and at Home.	Total.	Admitted.	Died.	
ARTILLERY.								
Head Quarters, and B Battery, 4th Brigade, R.H.A.	143	241	3	..	3	1,685	20·98	Kirkee .. .. Whole Year
A Battery, 4th Brigade, R. H. A.	94	178	2	..	2	1,894	21·27	Deesa .. .. „
C „ 4th „ „	98	230	2	..	2	2,347	20·41	Nusseerabad .. .. „
D „ 4th „ „	120	258	5	..	5	2,150	41·67	Ahmednuggur, whole year.
5th „ 13th Brigade, R. A.	29	39	2	..	2	1,345	68·96	Kurrachee, 2½ months; Colaba, ½ month (embarked for England).
6th „ 13th „ „	44	191	..	..	..	4,341	..	Neemuch, 2 months; on march to and at Bombay, 1 month (embarked for England).
7th „ 13th „ „	36	18	..	..	..	500	..	Poona, 2 months (embarked for England).
Head Quarters, 4th and 6th Batteries, 18th Brigade, R.A.	302	559	1	..	1	1,851	3·31	Kirkee .. .. Whole Year
1st Battery, 18th Brigade, R. A.	53	68	2	..	2	1,283	37·74	Kirkee, 3 months; on march, 1 month; Poona, 6 months; on march, 2 months.
2nd „ 18th „ „	111	152	3	..	3	1,369	27·03	Belgaum, 9mths.; on march 1 mth.; Hydrabad, 2mths.
3rd „ 18th „ „	100	176	1	..	1	1,760	10·00	Sholapoor .. .. Whole Year
5th „ 18th „ „	114	127	2	..	2	1,114	17·54	Hydrabad, 11 months; on march 1 month.
Head Quarters, and 1st Battery, 21st Brigade, R. A.	93	220	3	..	3	2,365	32·26	Indore 2½ months; on march, 1 month; Mhow, 8½ months.
2nd Battery, 21st Brigade, R. A.	68	128	1	..	1	1,882	14·71	Belgaum .. .. Whole Year
3rd „ 21st „ „	106	191	1	..	1	1,802	9·43	Kurrachee, whole year.
4th „ 21st „ „	93	336	6	..	6	3,613	64·52	Mhow, 2 months; on march, ½ month; Neemuch, 9½ months.
5th „ 21st „ „	114	283	3	..	3	2,482	26·31	Ahmedabad .. .. Whole Year
6th „ 21st „ „	84	96	3	..	3	1,143	35·71	Aden .. .. „
Sappers and Miners	75	110	3	..	3	1,467	40·00	Poona .. .. „
R. A. (Brigade not specified)	..	..	..	2	2	..	..	
Total Royal Artillery..	1,877	3,601	43	2	45	1,918	23·97	

Corps.	Average Strength for the Year.	Admitted into Hospital.	Died.			Ratio per 1,000 of Mean Strength.		Stations during the Year.
			In India.	Invalids on Board Ship and at Home.	Total.	Admitted.	Died.	
CAVALRY.								
3rd Dragoon Guards	587	1,002	19	..	19	1,707	32·37	On march 1 month; Ahmednuggur 11 months.
6th Dragoons	654	1,250	27	2	29	1,911	44·34	Mhow .. .. Whole Year
Total Cavalry	1,241	2,252	46	2	48	1,815	38·68	
INFANTRY.								
4th Foot, 1st Battalion	1,003	1,325	11	1	12	1,321	11·96	Kurrachee, Hydrabad, and Aden .. Whole Year.
28th Foot	992	2,935	20	2	22	2,959	22·18	Nusseerabad and Ajmere .. .. ”
33rd ”	1,006	1,678	15	2	17	1,668	16·90	Ahmedabad, Sattara, Surat, and Azimghur, whole year.
44th ”	948	1,490	13	..	13	1,572	13·71	Belgaum, whole year.
56th ”	858	1,768	51	4	55	2,031	64·10	Deesa (detachment at Mount Aboo). Whole Year
72nd ”	944	1,737	13	3	16	1,840	16·95	Mhow and Indore .. .. .. ”
95th ”	1,022	894	14	1	15	875	14·68	Poona, whole year; detachment at Hydrabad and Aden, 2 months.
103rd ”	733	1,045	13	..	13	1,426	17·73	Poona .. .. Whole Year
106th ”	465	2,086	24	1	25	4,486	53·76	Neemuch .. .. ”
109th ”	772	769	11	..	11	996	14·25	Kurrachee .. .. ”
Total Infantry	8,743	15,727	185	14	199	1,799	22·76	

Bombay.

From this Table it will be seen that the sickness has been highest in the Artillery, and the mortality, in the Cavalry. Omitting the 13th Brigade, Royal Artillery, which was in India for only a short period of the year, the admissions were most numerous in the 4th Battery 21st Brigade, at Neemuch, and were considerably above the average also in the 5th Battery of the same brigade at Ahmedabad, the 1st Battery, at Mhow, and the C Battery 4th Brigade, R.H.A., at Nusseerabad. Neemuch also furnished the highest ratio of mortality.

The admissions into hospital in the Cavalry were lower, but the mortality was 15 per 1,000 higher than in the Artillery. In the 6th Dragoons, at Mhow, the deaths amounted to 44 per 1,000 of the strength, chiefly from dysentery and diarrhœa, which were the cause of 11 out of 27 deaths. The mortality in the 3rd Dragoon Guards was also considerably above the average, but half of it arose from epidemic cholera at Ahmednuggur. In the Infantry both sickness and mortality were below the average of the other two arms. The admissions, however, were very high at Neemuch, n the 106th Regiment, and at Nusseerabad, in the 28th, while the mortality was excessive in the 56th, at Deesa, and the 106th, at Neemuch. Nearly half of the deaths in the latter corps were caused by epidemic cholera.

Section II.

On the extent of Invaliding.

India

The number of invalids sent to England during the year recommended for discharge from the service were, from Bengal 460, from Madras 120, from Bombay 129; and for change of climate, from Bengal 616, from Madras 234, and from Bombay 236, making a total of 1,795, or 28·17 per 1,000 of the strength. The disabilities for which the men were invalided are classified in the following Table, prepared from Abstract No. XXVIII. of Appendix:—

India.

Orders.		Bengal.		Madras.		Bombay.	
	Mean Strength..	39,312		12,531		11,870	
		Recommended for—					
		Discharge from the Service.	Change of Climate.	Discharge from the Service.	Change of Climate.	Discharge from the Service.	Change of Climate.
	Class I.						
1	Miasmatic Diseases—						
	Ophthalmia	24	27	..	6	2	11
	Dysentery and Diarrhœa	8	47	..	34	..	16
	Paroxysmal Fevers ..	11	47	5	3	..	9
	Continued ,, ..	1	7	..	..	..	..
	Rheumatism	105	77	53	24	16	35
2	Enthetic Diseases	21	54	..	20	6	13
3	Dietic ,, ...	..	3	..	..	2	6
	Class II.						
1	Diathetic Diseases ..	15	17	..	1	2	2
2	Tubercular ,, ...	59	27	13	27	18	8
	Class III.						
	Diseases of the—						
1	Nervous System	42	18	13	6	27	13
2	Circulatory ,, ..	46	21	2	21	23	21
3	Respiratory ,, ..	9	22	2	4	5	7
4	Digestive ,, ..	39	159	4	51	15	75
5	Urinary ,, ..	1	2	..	4	2	2
6	Reproductive ,, ..	2	4	..	..	1	..
7	Locomotive ,, ..	6	6	1	5	4	5
8	Integumentary ,, ..	4	11	..	3	..	3
	Class IV.						
4	Diseases of Nutrition ..	50	61	22	24	2	6
	Class V.						
1	Accidents	15	6	5	1	4	4
	Self-inflicted injuries ..	2	..	..	..	..	..
	Total ..	460	616	120	234	129	236
	Ratio per 1,000 of mean strength .. 1862	11·70	15·67	9·58	18·67	10·87	19·88
	1861	..	..	13·32	22·25	11·85	16·93

There has been a slight decrease in the number sent home from Madras, and an increase from Bombay. The number invalided from Bengal in 1861 cannot at present be correctly stated.

Diseases of the digestive system have been the cause of the highest proportion of invaliding from all the Presidencies, the principal disease being chronic inflammation of the liver. Rheumatism has also given rise to a high proportion, and diseases of nutrition, especially in Bengal and Madras. The latter are believed to have been chiefly the result of repeated attacks of fever.

The numbers finally discharged the service during the year at Fort Pitt and Woolwich, of invalids sent home from India, were, from Bengal 541, from Madras 201, from Bombay 345, and of the Royal Artillery, from India generally, 113, making a total of 1,200, or 18·83 per 1,000 of the strength, being one half higher than the average of the two preceding years.

The disabilities of these invalids are classed in the following Table :—

India.

	Exclusive of Royal Artillery.			Royal Artillery in India.	Total.
	Bengal.	Madras.	Bombay.		
Average Strength	35,301	10,169	9,993	8,250	63,713
Dysentery and Hepatic Disease ..	31	23	19	17	90
Rheumatism and Chronic Pains ..	80	47	45	14	186
Venereal	16	8	24	5	53
Weakly Constitution and Debility .	4	1	5	14	24
Dropsy and Visceral Disease ..	4	2	1	2	9
Cachexies and Scrofula	18	14	2	6	40
Pulmonary Disease..	203	18	53	8	282
Mental Diseases	17	12	30	..	59
Paralysis	12	2	8	3	25
Epilepsy	23	5	10	3	41
Deafness	6	4	6	..	16
Headache	..	..	..	3	3
Eye Diseases	31	16	54	8	109
Cardiac and Aortic Disease ..	50	21	44	12	127
Hernia	11	9	13	1	34
Stricture and Urinary Diseases ..	1	3	7	2	13
Contractions	7	..	5	3	15
Ulcers and Varices..	8	5	5	4	22
Dislocations, Fractures, and Amputation	5	9	9	6	29
Wounds	10	2	3	2	17
Worn out	4	..	2	..	6
Total	541	201	345	113	1,200
Ratio per 1,000 of mean strength 1862	15·32	19·88	34·52	13·70	18·83
1860–61	8·55	9·06	30·59	12·93	12·33

Pulmonary disease has been the chief cause of discharge among the invalids from Bengal and Bombay, and rheumatism among those from Madras. Cardiac and aortic disease, dysentery and hepatic disease, and eye diseases, also hold an important place among the disabilities.

Section III.

Mean Daily Sick.

We are unable to state the average number constantly sick in Bengal, in 1862. In Madras it was 774, and in Bombay 825. The following Table gives the usual information on this subject :—

	Bengal.		Madras.		Bombay.	
	1862.	1860-61.	1862.	1860-61.	1862.	1860-61.
Ratio per 1,000 constantly Sick ..	..	77·27	61·77	60·22	69·50	69·19
		Days.	Days.	Days.	Days.	Days.
Average Sick Time to each Soldier	..	28·26	22·54	21·98	25·37	25·25
Average Duration of Cases ..	..	14·11	17·42	16·04	13·95	13·58

There has been a very slight increase in all the particulars, both in Madras and Bombay, but the ratio is still considerably under the previous average of Bengal.

India.

Section IV.

On the Influence of Age on the Mortality.

The following Table, compiled from Abstract No. XXIX. of Appendix, shows the numbers living, and the deaths at each age, in quinquennial periods, in India, during the year 1862 :—

	Under 20 years.		20–24.		25–29.		30–34.		35–39.		40 and upwards.	
	Strength on 1st January.	Died during Year.	Strength on 1st January.	Died during Year.	Strength on 1st January.	Died during Year.	Strength on 1st January.	Died during Year.	Strength on 1st January.	Died during Year.	Strength on 1st January.	Died during Year.
Bengal	1,208	5	13,857	310	11,766	308	4,089	132	1,509	68	294	19
Madras	509	..	3,398	55	3,703	73	1,242	44	506	18	98	4
Bombay	643	2	5,005	89	3,326	92	1,990	69	859	29	209	9
Total	2,360	7	22,260	454	18,795	473	7,321	245	2,874	115	601	32
Ratio of Deaths per 1,000 of Strength	2·97		20·39		25·17		33·46		40·01		53·24	

This Table shows a much more rapidly progressive increase of mortality with the advance of age than is usual in temperate climates, the mortality at the ages 35–39 being double that of the ages 20–24. The practical bearing of these results upon the question of the reliefs of regiments in India must be obvious.

XIII. ON THE HEALTH OF TROOPS ON BOARD SHIP.

Troops on Board Ship.

The returns received in 1862 of troops on board ship show the sickness and mortality among 19,432 men, who may be grouped in the following classes:—

I.	Regiments or drafts proceeding on foreign service....	8,120
II.	Returning home from foreign service	4,490
III.	Troops passing by sea from one colony to another, or from one station in a military Command to another	4,223
IV.	Invalids returning to England	2,599

Adopting the same classification of stations, and calculating the average *annual* strength on the principles explained in last Report, we shall now submit the information on this subject afforded by the returns.

I. Troops proceeding on Foreign Service.

The returns show 8,120 men of this class to have embarked. The following Table, compiled from Abstract No. XXX. of Appendix, shows the cases of sickness, and the deaths which occurred among them during the voyages:—

Troops on Board Ship.

	Stations	To India and China.						To Mediterranean.						To British America.					
	No. of men Embarked ..	3,776				1861.		196				1861.		4,148				1861.	
	Average *Annual* Strength ..	1,152						11						298					
				Ratio per 1000.		Ratio per 1000.				Ratio per 1000.		Ratio per 1000.				Ratio per 1000.		Ratio per 1000.	
Order.		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
	Class I.																		
1	Miasmatic Diseases ..	202	3	175 ·3	2 ·60	144 ·4	2 ·65	7	..	636 ·4	..	120 ·9	..	47	..	157 ·7	..	170 ·2	..
2	Enthetic ,, ..	220	..	191 ·0	..	92 ·7	..	2	..	181 ·8	..	131 ·8	..	96	..	322 ·1	..	255 ·2	..
3	Dietic ,, ..	6	..	5 ·2	..	4 ·0	..	..	..	..	..	..	..	..	..	..	..	..	..
4	Parasitic ,, ..	15	..	13 ·0	..	4 ·0	..	..	..	..	..	..	..	..	..	..	..	1 ·6	..
	Class II.																		
1	Diathetic Diseases ..	5	..	4 ·3	..	2 ·6	..	..	..	..	..	..	..	..	..	..	..	..	..
2	Tubercular ,, ..	9	1	7 ·8	·87	6 ·6	..	..	..	..	..	..	..	..	..	..	..	3 ·2	..
	Class III.																		
	Diseases of the—																		
1	Nervous System ..	25	..	21 ·7	..	17 ·2	..	..	..	..	..	..	..	4	..	13 ·4	..	33 ·7	1 ·60
2	Circulatory ,, ..	8	..	6 ·9	..	..	..	..	..	..	..	..	10 ·99	2	1	6 ·7	3 ·36	11 ·2	..
3	Respiratory ,, ..	47	2	40 ·8	1 ·74	30 ·5	1 ·33	2	..	181 ·8	..	22 ·0	..	14	..	47 ·0	..	65 ·8	..
4	Digestive ,, ..	97	..	84 ·2	..	42 ·4	1 ·33	3	..	272 ·7	..	33 ·0	..	11	..	36 ·9	..	61 ·0	..
5	Urinary ,, ..	1	..	·9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	Reproductive ,, ..	10	..	8 ·7	..	2 ·6	..	..	..	..	..	..	..	..	..	..	..	..	..
7	Locomotive ,, ..	7	..	6 ·1	..	1 ·3	..	..	..	..	..	..	..	..	..	..	..	..	..
8	Integumentary,, ..	75	..	65 ·1	..	68 ·9	..	..	..	..	..	98 ·9	..	24	..	80 ·5	..	80 ·3	..
	Class IV.																		
4	Diseases of Nutrition ..	2	..	1 ·7	..	5 ·3	..	..	..	..	..	..	..	..	..	..	..	3 ·2	..
	Class V.																		
1	Accidents	102	1	88 ·5	·87	58 ·3	2 ·65	..	..	..	..	98 ·9	..	28	1	94 ·0	3 ·36	67 ·4	..
4	Suicide	..	..	..	..	1 ·3	1 ·33	..	..	..	..	..	..	..	..	..	..	..	..
6	Corporal Punishment ..	1	..	·9	..	4 ·0	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	832	7	722 ·1	6 ·08	486 ·1	9 ·29	14	..	1272 ·7	..	505 ·5	10 ·99	226	2	758 ·3	6 ·72	752 ·8	1 ·60

Troops on Board Ship.

The cases of sickness were more numerous among the troops proceeding to India than in 1861. The difference was most marked in venereal; it was also considerable in diseases of the digestive system, owing chiefly to a large number of cases of constipation having been treated in a detachment of Royal Artillery on board the St. Lawrence, proceeding to Calcutta. No explanation of the circumstance is given in the report of the Medical Officer in charge. Of seven deaths among this class of troops, three were from typhoid fever, in a detachment of Royal Artillery on board the "Blenheim," from Gravesend to Calcutta. The Assistant Surgeon in charge states that he was unable to trace any local cause for these cases. One death was by drowning, but no information has been given of the circumstances under which it occurred.

The death by accident among the men proceeding to British America was that of a Private of the 15th Regiment, on board Her Majesty's steam transport "Adelaide," proceeding to New Brunswick, who dislocated his neck by falling into the coal hole, "the hatch having been carelessly left off, and no lamp being placed there."

II. TROOPS RETURNING FROM FOREIGN SERVICE.

The following Table, framed from Abstract No. XXXI. of Appendix, gives the necessary information respecting the sickness and mortality among the troops returning home :—

Troops on Board Ship.

Order.	Diseases.	Admitted.	Died.	Ratio per 1000. Admitted.	Ratio per 1000. Died.	1861. Ratio per 1000. Admitted.	1861. Ratio per 1000. Died.	Admitted.	Died.	Ratio per 1000. Admitted.	Ratio per 1000. Died.	1861. Ratio per 1000. Admitted.	1861. Ratio per 1000. Died.	Admitted.	Died.	Ratio per 1000. Admitted.	Ratio per 1000. Died.
	Number of Men Embarked	3,149.						100.						1,241.			
	Average *Annual* Strength	959.						20.						51.			
	Class I.																
1	Miasmatic Diseases	596	47	621·5	49·01	419·3	16·86	15	..	750·0	..	1029·7	..	9	..	176·5	..
2	Enthetic ,, ...	178	..	185·6	..	98·4	..	3	..	150·0	..	103·7	..	5	..	98·0	..
3	Dietic.. ,, ...	3	2	3·1	2·08	6·4	·45	..	..	..	..	..	..	..	..	..	..
4	Parasitic ,, ...	7	..	7·3	..	1·4	..	..	..	..	..	..	..	..	..	..	..
	Class II.																
1	Diathetic Diseases	3	..	3·1	..	·4	..	..	..	..	..	..	..	..	..	..	..
2	Tubercular ,, ...	22	3	22·9	3·14	5·0	1·83	6	1	300·0	50·00	..	7·41	2	..	39·2	..
	Class III.																
	Diseases of the—																
1	Nervous System	38	1	39·6	1·04	13·2	1·83	9	2	450·0	100·00	14·8	..	4	..	78·4	..
2	Circulatory ,, ...	14	3	14·6	3·14	·9	..	4	..	200·0	..	7·4	..	2	..	39·2	..
3	Respiratory ,, ...	90	1	93·9	1·04	32·8	·91	..	..	..	..	37·0	..	3	..	58·8	..
4	Digestive ,, ...	128	5	133·5	5·21	52·0	1·83	1	..	50·0	..	103·7	..	1	..	19·6	..
5	Urinary ,, ...	7	..	7·3	..	2·3	..	2	..	100·0	..	..	..	1	..	19·6	..
6	Reproductive ,, ...	4	..	4·2	..	5·5	..	..	..	..	..	7·4	..	..	..	..	..
7	Locomotive ,, ...	3	..	3·1	..	2·3	..	..	..	..	..	..	..	2	..	39·2	..
8	Integumentary ,, ...	86	..	89·7	..	72·5	·45	2	..	100·0	..	96·3	..	10	..	196·2	..
	Class IV.																
4	Diseases of Nutrition. ..	26	2	27·1	2·08	·9	...	..	..	..	..	..	..	..	..	..	..
	Class V.																
1	Accidents	66	2	68·8	2·08	52·0	·91	1	..	50·0	..	51·9	..	3	..	58·8	..
6	Corporal Punishment ..	1	..	1·0	..	·9	..	..	..	..	..	..	..	..	..	..	..
	Diseases not specified. ..	..	..	..	..	2·7	..	..	..	..	..	..	..	..	..	..	..
	Total	1,272	66	1326·3	68·82	768·9	25·07	43	3	2150·0	150·00	1451·9	7·41	42	..	823·5	..

Troops on Board Ship.

The sickness and mortality among the troops returning from India and China have been greatly in excess of the preceding year. The increase in the former has extended to almost all the classes of diseases, though most marked in miasmatic, venereal, and diseases of the digestive system.

The excessively high rate, both of cases and deaths, was mainly due to the state of health of the 75th Regiment, which embarked for England at Calcutta in the end of February, on board the "Dartmouth," the "Malabar," and the "Salamanca." Among 652 men embarked, 499 cases of sickness, and 43 deaths, occurred. The strength, corrected to the *annual* average would be 214, and these numbers would therefore give an *annual* ratio of 2,332 cases, and 200·93 deaths, per 1,000 of the strength. The chief causes of death were dysentery, diarrhœa, and cholera. The Medical Officers in charge reported that the condition of the ships was satisfactory, and attributed the sickly state of the men to their previous service, and to the period of the year—the commencement of the unhealthy season—at which they were embarked. The sickness and mortality among the troops in this class, exclusive of the 75th Regiment, were in the annual ratio of 1,038 and 30·87 per 1,000, being only slightly in excess of the results of the preceding year.

The number of men returning from the Cape and British America was too small to admit of any useful comparison.

III. TROOPS PROCEEDING FROM ONE COLONY TO ANOTHER.

The only returns relating to this class in 1862 were those of the troops changing stations in the Mediterranean, and in the West Indies.

The following Table, condensed from Abstract No. XXXII. of Appendix, gives the results as regards the health of the men :—

Stations		West Indies.				Mediterranean.			
No. of Men embarked..		868.				3,355.			
Average *Annual* Strngth		20.				64.			
				Ratio per 1,000.				Ratio per 1,000.	
Order.	Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
	Class I.								
1	Miasmatic Diseases	3	..	150·0	..	15	..	234·4	..
2	Enthetic ,, ..	..	..	..	..	17	..	265·6	..
3	Dietic ,, ..	..	..	..	..	2	..	31·3	..
	Class II.								
1	Tubercular Diseases	..	..	..	..	1	..	15·6	..
	Class III.								
	Diseases of the—								
1	Nervous System..	1	..	50·0	..	3	..	46·9	..
2	Circulatory ,,	..	..	..	..	1	..	15·6	..
3	Respiratory ,,	..	..	..	..	2	..	31·3	..
4	Digestive ,,	..	..	..	..	3	..	46·9	..
5	Urinary ,,	..	..	..	..	1	1	15·6	15·63
6	Reproductive ,,	..	..	..	..	2	..	31·3	..
7	Locomotive ,,	..	..	..	..	1	..	15·6	..
8	Integumentary ,,	..	..	..	..	15	..	234·4	..
	Class V.								
1	Accidents	1	..	50·0	..	7	..	109·4	..
	Total ..	5	..	250·0	..	70	1	1,093·9	15·63

The numbers are too few to require any detailed remarks.

IV. INVALIDS, &c., RETURNING TO ENGLAND.

The numbers embarked were considerably under those of 1861, but the proportion of deaths corresponded closely in the two years. As, however, these have all been included in the mortality of the Colonies and Commands from which they were sent, it is unnecessary to enter into any further details respecting them.

Troops on Board Ship.

XIV. SUMMARY.

The following Table shows in a condensed form the amount of sickness, mortality, and discharges by invaliding, in the army, at home and abroad, during the year 1862; and to facilitate comparison with the results of previous periods, summaries prepared from the Reports for 1860 and 1861 are annexed.

Summary.

Summary.

Troops in.	White Troops.							Colonial Corps*						
					Annual Ratio per 1,000 of Strength.							Annual Ratio per 1,000 of Strength.		
	Mean Strength.	Admissions into Hospitals.	Deaths.	Discharges by Invaliding.	Admitted.	Died.	Discharged as Invalids.	Mean Strength.	Admissions into Hospital.	Deaths.	Discharges by Invaliding.	Admitted.	Died.	Discharged as Invalids.
United Kingdom ..	78,173	77,332	682	3,226	989	8·72	41·27							
Mediterranean ..	15,437	12,032	119	272	779	7·71	17·62	607	502	4	..	827	6·60	..
British America..	16,395	10,836	151	157	661	9·21	9·58							
West Indies ..	1,924	1,886	25	37	980	12·99	19·23	3,678	3,419	90	121	930	24·47	32·90
Western Africa ..	..	..	..	..	..	..	..							
St. Helena ..	697	564	7	1	809	10·03	1·43							
Cape of Good Hope ..	4,519	3,906	44	73	864	9·73	16·15							
Mauritius ..	2,049	1,685	90	45	822	43·92	21·96							
Ceylon ..	874	1,078	17	29	1,233	19·43	33·18	1,468	1,506	22	39	1,026	14·98	26·57
Australasia ..	6,482	3,674	72	73	567	11·26	11·26							
China ..	3,511	6,485	348	103	1,847	99·12	29·34	1,725	2,500	41	?	..	..	..
India ..	63,713	110,584	1,636	1,200	1,736	25·66	18·83							
On board Ship ..	5,866	2,504	79	..	427	13·47	..							
Total ..	199,640	232,566	3,270	5,216	1,165	16·38	26·13	7,478	7,927	157	..	1,060	20·99	..

* Under this head are included only such Colonial Corps as are not composed of natives of Great Britain. The Canadian Rifles, the St. Helena Regiment, and the Newfoundland Companies, are included in the first division of the Table.

This Table shows that in the whole army, at home and abroad, the admissions into hospital have amounted to 1,165 per 1,000 of mean strength, the deaths to 16·38, and the discharges by invaliding to 26·13. The number constantly non-effective by sickness in this force, exclusive of the troops in Bengal and on ship-board, was 49·77 per 1,000; the average sick time to each soldier was 18·16 days, and the average duration of the cases in hospital amounted to 17·84 days.

Summary.

SUMMARY, showing the amount of Sickness, Mortality, and Discharges by Invaliding, in the Army, at Home and Abroad, during the year 1861.

Troops in—	White Troops.							Colonial Corps.						
	Mean Strength.	Admitted into Hospital.	Deaths.	Discharged by Invaliding.	Annual Ratio per 1,000 of Strength.			Mean Strength.	Admissions into Hospital.	Deaths.	Discharges by Invaliding.	Annual Ratio per 1,000 of Strength.		
					Admitted.	Died.	Discharged as Invalids.					Admitted.	Died.	Discharged as Invalids.
United Kingdom	88,955	91,220	822	4,554	1,025	9·24	51·19							
Mediterranean	15,769	13,442	165	238	852	10·46	15·09	605	506	6	..	836	9·92	..
British America	6,564	3,792	63	76	578	9·60	11·58							
West Indies	1,897	1,895	13	46	999	6·85	24·25	3,514	3,598	96	50	1,024	27·32	14·23
Western Africa	..	..	..	..	..	..	..							
St. Helena	680	705	8	8	1,037	11·76	11·76							
Cape of Good Hope	4,598	3,974	46	82	864	10·00	17·83							
Mauritius	1,921	1,168	23	8	608	11·97	4·16							
Ceylon..	907	1,306	18	11	1,440	19·85	12·13	1,448	1,939	14	35	1,339	9·67	24·17
Australasia	5,797	3,787	82	61	653	14·14	10·52							
China	6,145	10,614	238	116	1,727	38·73	18·88	3,128	3,958	89	?	1,265	28·45	
India	57,082	102,353	2,097	857	1,789	36·74	15·01							
On board Ship	4,978	3,976	98	..	799	19·69	..							
Total	195,293	238,232	3,673	6,057	1,220	18·81	31·02	8,695	10,001	205	..	1,150	23·58	..

Summary.

SUMMARY, showing the amount of Sickness, Mortality, and Discharges by Invaliding, in the Army, at Home and Abroad, during the year 1860.

Troops in—	White Troops.							Colonial Corps.						
	Mean Strength.	Admissions into Hospitals.	Deaths.	Discharges by Invaliding.	Annual Ratio per 1,000 of Strength.			Mean Strength.	Admissions into Hospital.	Deaths.	Discharges by Invaliding.	Annual Ratio per 1,000 of Strength.		
					Admitted.	Died.	Discharged as Invalids.					Admitted.	Died.	Discharged as Invalids.
United Kingdom	97,703	102,858	972	2,037	1,053	9·95	20·85							
Mediterranean	15,657	13,386	154	138	855	9·84	8·81	608	448	..	..	737	..	..
British America	5,280	3,385	45	66	641	8·52	12·50							
West Indies	1,849	1,812	19	3	980	10·28	1·62	} 3,550	3,029	100	59	853	28·17	16·62
West Africa	..	..	..	..	..	..	..							
St. Helena	461	385	5	1	835	10·85	2·17							
Cape of Good Hope	4,242	3,606	56	52	850	13·16	12·26							
Mauritius	1,886	2,110	45	21	1,119	23·86	11·13							
Ceylon..	916	1,531	18	1	1,672	19·65	1·09	1,533	1,823	20	13	1,189	13·05	8·48
Australasia	2,794	2,047	68	32	733	24·34	11·45							
China	7,891	16,173	426	14	2,049	53·98	1·77	5,275	11,180	168	?	2,119	31·85	?
India	64,455	123,927	2,279	642	1,923	35·36	9·96							
Total	203,134	271,220	4,087	3,007	1,335	20·12	14·80	10,966	16,480	288	..	1,503	26·26	..

POSTSCRIPT.

Whilst this Report was passing through the press, a document of great interest was received relative to the French Army. It is the first report on the health of that army which has been published by authority of the Government, and relates to the sickness and mortality of the troops serving in France, Algeria, and Italy in 1862.* The Force in Mexico has not been included, but will be made hereafter the subject of a special report. As the relative health of the French and British armies cannot fail to interest the officers of the Medical Department, the leading points in the two reports have been brought into comparison. On a future occasion we hope to be able to enter more fully upon the subject.

It appears necessary, however, before submitting the general results, to call attention to some points of difference in the system of the two armies. In the British army, a soldier, if unfit for duty by sickness, of however trifling a description, is taken into hospital for treatment. In the French army, only the more severe cases of disease are admitted into hospital. The slighter cases, including syphilis, gonorrhœa, boils, a large proportion of skin diseases, &c., are treated in the regimental infirmary and in quarters (*à la chambre*). It must be obvious that all the cases treated in hospital in the one army represent the same thing as those treated in hospital, regimental infirmary, and quarters in the other. The latter, therefore, must be combined in making any comparison of the sickness in the two services.

There is another point on which a marked difference exists. In the French army, a large number of the men, amounting, on the average of the year, to nearly one-sixth of the strength, are always absent from their corps (congé de convalescence, de semestre, permission, detention, &c.). As the cases of sickness among them are not entered in the returns, the calculations must necessarily be made on the strength present; but as deaths occurring among them are included, the ratio of mortality must be calculated on the effective strength. In the British army the average number so absent is very small, and would scarcely affect the general results; but as they are not comprised in the strength as made up from the weekly returns, the omission tells unfavourably in any comparison. In the French army the returns include officers with the non-commissioned officers and men, while they are stated separately in the British. As regards the admissions, there are no means of separating those of the officers and men, but this can be done in the return of the deaths.

In 1862, the effective strength of the army in France was 304,733, and the average number present was 256,322; the number of cases which came under treatment in hospital, infirmary, and quarters, during the year was 636,370, and the total deaths, including officers, amounted to 2,871. These numbers give the proportion of 2,482 cases per 1,000 present during the year, and 9·42 deaths per 1,000 effective strength. The average number constantly sick was 13,666, or 53·31 per 1,000 present. From these data we deduce the average sick time to each soldier present to have been 19·46 days, and the average duration of the cases 7·84 days.

The following Table shows these in comparison with the corresponding results for the British army in 1862.

	Ratio of Cases per 1,000 of Strength.	Ratio per 1,000 constantly Sick.	Average Sick Time to each Soldier.	Average Duration of Cases.
			Days.	Days.
French Army serving at Home	2,482	53·31	19·46	7·84
British ditto	989	53·45	19·50	19·72

From this it appears that the cases of sickness in the French army have been two and a-half times as numerous as in the British, but that the number constantly non-effective from sickness, and the sick time to each soldier, have been nearly identical in the two services. The average sick time to each soldier being the same, while the cases in the French army are so much more numerous, it follows, as a matter of course, that the period under treatment must be much shorter, and accordingly it is found to be as 9 to 19¾ days.

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* Appendice au compte rendu sur le Service du Recrutement de l'Armée.—Statistique Médicale de l'Armée pendant l'année 1862. Paris, 1864.

We have not sufficient information with regard to the system of returns in the French army to be able to speak positively on the subject, but it seems probable that this large proportion of admissions may be partly due to the same case being reported twice or even three times. For instance, if a case under treatment in quarters is transferred to the regimental infirmary, or from the latter to hospital, it may perhaps be entered as an admission in the returns from both these establishments, and thus increase the number of cases, and of course diminish their apparent duration. This source of error, if it exist, might be obviated by entering such as transfers instead of admissions, and the actual number of cases of disease would then appear in the returns.

The total deaths, as already stated, amounted to 2,871 in a strength of 304,733, being in the ratio of 9·42 per 1,000; but, if the strength of the officers and deaths among them, amounting to 13,865 and 82 respectively, be deducted, the deaths of non-commissioned officers and men will be 2,789 in a strength of 290,868, or 9·59 per 1,000. The mortality in the whole force serving in the United Kingdom in 1862, exclusive of officers, amounted to 8·72 per 1,000, or ·87 below that of the same class in France.

The Report now before us states the sickness and mortality in the different arms of the service separately. We have prepared the following Table showing the results in comparison with, as nearly as possible, the corresponding arms in the British service.

	French Army in France.			British Army in United Kingdom.		
	Admissions per 1,000 of Strength.	Deaths per 1,000 of Strength.	Average constantly Sick per 1,000.	Admissions per 1,000 of Strength.	Deaths per 1,000 of Strength.	Average constantly Sick per 1,000.
Imperial Guard ..	1,316	7·07	36·8	..	..	..
Household Cavalry Foot Guards ..	..	..	..	822	10·47	51·88
Infantry of the Line ..	2,664	9·74	52·4	..	..	..
Light Infantry ..	2,784	10·70	62·8	..	..	..
Infantry Regiments Depôt Battalions	..	..	..	857	8·09	46·34
Cavalry and Remounts	2,773	9·90	65·2	..	..	..
Cavalry of the Line Cavalry Depôts	..	..	..	1,018	5·26	44·07
Artillery and Train of Artillery ..	2,451	9·08	56·5	..	..	..
Royal Artillery Depôt Brigade, R.A.	..	..	..	1,059	7·50	59·14
Engineers	2,476	7·38	56·8	..	..	..
Royal Engineers ..	..	..	..	..	8·97	..
Baggage Train (Troops)	2,756	11·29	59·4	..	..	..
Military Train ..	..	..	..	1,115	3·23	54·23
Guard of Paris, Gendarmerie of the Seine, Fire Brigade*	1,296	8·93	30·4	..	..	...
Companies of Veterans*	1,577	29·95	54·6	..	..	..
Coast Brigade, R.A.† ..	..	..	..	..	19·69	..
In Penitentiaries of France* ..	3,552	6·65	76·7	..	..	..
Workmen of Artillery, Engineers, Train, & Administration*	2,796	7·40	45·4	..	..	..
Orderlies (Infirmiers)‡	1,125	7·09	35·2	..	..	..

* There are no corresponding troops in the British army.

† The Coast Brigade does not exactly correspond with the Veterans, but is the nearest approach to them.

‡ The orderlies of the British Army Hospital Corps are included in the returns of the corps with which they are doing duty.

The ratio of sickness has, as before, been calculated on the number present, that of the mortality on the effective strength; and as the strength and deaths of officers have not been stated separately for the different arms, they are unavoidably included, also, in the latter calculation for the French army.

It will be observed, that the mortality in the Household Brigade is higher than in the Imperial Guards, and in the Royal Engineers it is also in excess of that of the corresponding French corps, but in all the other branches it is lower. No information is given in the French Report as to the ages of the men serving and the deaths at different periods of life; but, considering the constitution of the two armies, it appears probable that there is a larger proportion of men at the more advanced ages in the British army, and that, consequently, any correction on that account would tell in its favour.

In the French Report, those diseases only by which the admissions into hospital have been occasioned are enumerated, while no information is given as to those treated in the regimental infirmaries and in quarters. After what has been already stated of the difference in the system of the two armies, it must be obvious that, from these Returns, no comparison can be made of the relative prevalence of different diseases. For instance, with regard to venereal, all cases of syphilis, when uncomplicated, and of gonorrhœa, are ordered to be treated in the regimental infirmary.[*] There appear, in the returns of admissions into hospital, only 13,621 of the former, and none of the latter. If the prevalence of syphilis in the French army were calculated upon these figures, the cases would appear to be in the ratio of 53 per 1,000 of the strength, while in the British army they are in the proportion of 144 per 1,000. But it appears that the average constantly non-effective from syphilis in hospitals, infirmaries, and in quarters, in 1862, was 2,848, or 11·11 per 1,000 present in the French army, while it was 844, or 10·82 per 1,000 of the troops serving in the United Kingdom. It appears a legitimate inference that the cases treated in infirmaries and in quarters would raise the proportion of cases at least to that which prevailed in the British army.

In Algeria, the effective strength of the army during the year 1862 was

---

[*] Maladies susceptibles d'être traitées dans les Infirmeries Régimentaires.—(Note Ministérielle du 30 Octobre, 1839).

1. Erythème.
2. Erysipèle simple, par cause externe, sans fièvre.
3. Eruptions anormales, furonculeuses, psoriformes.
4. Toutes les inflammations superficielles de la peau, sans fièvre.
5. Gale, à moins quelle ne soit invétérée.
6. Dartres récentes simples, causées par la malpropreté, l'insolation, &c.
7. Phlegmons peu étendus et sans fièvre.
8. Abcès superficiels.
9. Furoncles.
10. Engelures.
11. Gengivite et stomatite.
12. Angine simple, sans fièvre.
13. Aphtes et ulcérations de la membrane muqueuse buccale, sans fièvre.
14. Prolapsus accidentel ou habituel de la luette.
15. Odontalgie causée ou non par la carie des dents.
16. Fluxions des joues.
17. Oreillons idiopathiques.
18. Amygdalite sans fièvre.
19. Diarrhée simple dont la durée n'excède pas quatre ou cinq jours.
20. Hémorrhoïdes récentes simples.
21. Bronchites sans fièvres.
22. Ganglionites simples qui ne réclament qu'un traitement locale.
23. Ophthalmies sans fièvres et sans gravité.
24. Otite. Otorrhée sans fièvre.
24. Balanite.
25. Urétrite aiguë, et subaiguë sans complication.
27. Luxations de l'articulation scapulo-humérale faciles a réduire.
28. Lombago sans fièvre.
29. Plaies simples et superficielles produites par des instruments tranchants ou contondants sans lésion de vaisseaux ou d'organes importants.
30. Syphilis. (Note Ministérielle du 9 Mars, 1860, insérée au Journal Militaire).

54,040, and the average number present was 47,869; the number of cases treated in hospital, infirmary, and quarters, was 121,500; of deaths, 666; and constantly sick, 2,386. In Italy the effective strength was 13,393; the average strength present, 12,387; the number of cases was 46,342, and of deaths 237; and the average constantly non-effective from sickness was 733. The following Table shows the proportion of admissions and mean sick per 1,000 present, and of deaths per 1,000 of effective strength. Similar information respecting the British troops serving, in 1862, in the Mediterranean stations, comprising Gibraltar, Malta, and the Ionian Islands, is added for the sake of comparison.

Ratio per 1,000.	Cases of Sickness.	Deaths.	Constantly Sick.
Algeria	2,538	12·21	49·84
Italy	3,741	17·69	59·17
Mediterranean ..	779	7·71	39·32

This shows a very high rate of sickness and mortality among the troops in Italy, which is doubtless due to the insanitary condition of Rome and the malarious character of the surrounding country.

The sickness and mortality in Algeria appear to be increased above the legitimate proportion by the employment of punishment corps (corps disciplinaires), the admissions, deaths, and mean sick in which are considerably higher than among the other troops, as will be seen by the following Table.

Ratio per 1,000.	Cases of Sickness.	Deaths.	Constantly Sick.
Corps disciplinaires	5,652	21·38	129·6
Other Corps ..	2,315	11·66	44·12

These results are quite in accordance with the experience of the British Army at a period when there were certain corps composed of men who were permitted to commute their punishment by volunteering for service in the West Indies and Western Africa. The sickness and mortality in them was always found to be greatly in excess of the other corps on the same station. The system has been discontinued in the British army for a period of nearly forty years.

We trust the present Report is but the first of an annual series on the health of the army, and that, in future volumes, the deficiencies to which we have alluded may be supplied, and we may be thereby enabled to institute an accurate comparison of the health of the two armies.

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APPENDIX No. I.

ABSTRACT showing the Admissions into Hospital and Deaths among the Troops serving in the United Kingdom in the year 1862.

	Household Cavalry.		Cavalry.		Royal Artillery.		Military Train.		Foot Guards.		Infantry.		Cavalry Depôts.		Roy. Art. Depôt Brigade.		Infantry Depôt Battalions.	
Strength	1,222		9,884		9,575		1,238		4,317		29,439		759		4,019		15,576	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
I. *Zymotic Diseases.*																		
1. Miasmatic:																		
Variola	..	..	2	..	10	..	..	..	..	..	24	2	..	..	26	1	3	..
Varioloides	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Varicella	..	..	1	..	..	..	..	..	..	..	5	..	..	..	..	..	3	..
Morbilli	1	..	2	..	13	..	..	..	..	..	22	..	..	..	2	..	7	..
Scarlatina	4	2	3	..	9	..	..	..	3	..	4	..	..	..	11	..	15	..
Tonsillitis	66	..	327	1	296	..	41	..	173	1	628	..	48	..	310	1	451	..
Influenza	..	..	248	..	75	..	35	..	97	..	502	..	15	..	21	..	244	..
Ophthalmia..	6	..	107	..	123	..	17	..	47	..	696	..	17	..	72	..	502	..
Erysipelas	1	..	22	..	20	..	3	..	14	..	69	2	1	..	7	1	20	3
Furunculus..	12	..	188	..	144	..	10	..	62	..	294	..	18	..	71	..	123	..
Anthrax	..	..	7	..	10	..	1	..	1	..	18	1	2	..	1	..	8	..
Dysenteria Acuta	..	..	5	..	1	..	3	..	..	..	18	..	2	..	2	..	35	..
,, Chronica	..	..	4	..	9	..	..	..	..	..	4	..	..	..	17	2	21	..
Diarrhœa	18	..	208	..	141	..	23	..	138	..	266	2	32	..	51	..	239	..
Cholera	..	..	1	..	1	1	..	..	..	..	1	..	..	..	..	..	2	..
Febris Intermittens	..	..	36	..	89	..	16	..	5	..	165	1	3	..	64	..	177	..
,, Remittens	..	..	2	..	2	..	4	..	..	..	1	..	..	..	2	..	8	1
,, Typhoides	1	1	5	4	7	1	1	1	5	1	7	3	4	3	1	2	13	7
,, Typhus	..	..		1	3	..	..	..	1	..	3	1	1	..	..	..	2	..
,, Continua	8	..	245	..	198	..	28	..	119	..	411	6	19	..	144	1	308	4

Rheumatismus Acutus	49	..	314	..	273	..	63	..	134	1	749	..	11	..	166	2	319	..
„ Chronicus	13	..	173	..	169	..	39	..	62	..	490	1	41	..	165	..	422	..
Parotitis	..	..	9	..	15	..	..	..	1	..	11	..	..	..	1	..	1	..
Coryza	..	..	1	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..
Diphtheria	..	..	1	..	..	..	..	..	1	..	1	..	..	..	..	..	2	1
Vaccinia	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Pertussis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..
2. Enthetic:																		
Syphilis Primaria	69	..	1,067	..	1,235	..	157	..	594	1	3,009	..	61	..	435	..	1,144	..
„ Secundaria	16	..	411	..	350	..	74	..	153	..	870	1	60	..	152	1	416	2
Iritis Syphilitica	..	..	33	..	11	..	2	..	13	..	53	..	1	..	8	..	10	..
Bubo	15	..	336	..	302	..	51	..	119	..	1,028	..	16	..	111	..	487	..
Gonorrhœa	44	..	1,156	..	1,396	..	188	..	335	..	3,542	..	130	..	601	..	1,725	..
Phymosis, &c.	..	..	21	..	14	..	4	..	2	..	55	..	2	..	12	..	48	..
Orchitis (Gonorrhœal)	8	..	133	..	75	..	12	..	77	..	267	..	1	..	31	..	135	..
Strictura Urethræ	3	..	30	..	22	..	6	..	6	..	81	..	..	..	15	..	61	2
Verrucæ	..	..	11	..	7	..	3	..	17	..	72	..	5	..	14	..	13	..
Cachexia Syphiloidea	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..
Rheumatismus (Gonorrhœal)	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	1	..
Ophthalmia „	..	..	..	..	..	..	..	..	..	..	12	..	..	..	..	..	1	..
Ulcus Penis	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	1	..
3. Dietic:																		
Scorbutus	..	..	..	..	2	..	2	..	..	..	3	..	..	..	..	..	9	..
Purpura	..	..	1	..	..	..	..	..	..	..	5	..	2	..	..	..	4	..
Ebriositas	4	..	47	1	77	..	6	..	26	..	114	1	5	..	19	..	129	1
Bronchocele	..	..	..	..	1	..	..	..	..	..	1	..	..	..	1	..	..	..
Rachitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
4. Parasitic:																		
Porrigo	..	..	3	..	13	..	3	..	3	..	50	..	1	..	3	..	28	..
Scabies	13	..	353	..	373	..	47	..	156	..	1,259	..	32	..	143	..	685	..
Tænia Solium	..	..	4	..	22	..	6	..	3	..	19	..	1	..	3	..	11	..
Vermes	..	..	1	..	1	..	1	..	..	..	9	..	..	..	..	..	2	..
Aphthæ	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..
Dracunculus	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..

Appendix No. I.—*continued.*

	Household Cavalry.		Cavalry.		Royal Artillery.		Military Train.		Foot Guards.		Infantry.		Cavalry Depôts.		Roy. Art. Depôt Brigade.		Infantry Depôt Battalions.	
Strength	1,222		9,884		9,575		1,238		4,317		29,439		759		4,019		15,576	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Phthiriasis	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	4	..
Ascaris Lumbricoides	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	1	..
II. *Constitutional Diseases.*																		
1. Diathetic:																		
Lumbago	2	..	11	..	18	..	3	..	7	..	19	..	..	..	6	..	8	..
Anæmia	..	..	3	..	1	..	1	..	..	..	16	..	2	..	1	..	1	..
Anasarca	..	..	5	..	6	..	..	..	1	..	16	3	..	..	..	..	19	2
Tumores	..	..	9	..	3	..	..	..	4	..	15	..	..	..	13	..	3	..
Carcinoma	..	..	..	..	2	1	..	..	..	..	1	..	..	..	..	..	1	..
Scirrhoma	..	..	..	..	2	..	..	..	..	..	1	..	..	..	1	..	..	..
Podagra	4	..	1	..	..	..	..	..	1	..	3	..	..	..	1	..	..	..
Ischias	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Lupus	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Melanosis	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Cachexia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..
2. Tubercular:																		
Scrofula	..	..	64	..	33	..	6	..	25	1	116	..	1	..	34	1	79	2
Phthisis Pulmonalis	11	5	57	18	58	17	4	2	68	20	258	63	4	3	137	33	200	62
Hæmoptysis	2	..	8	1	33	..	2	..	16	5	100	7	1	..	11	..	42	3
Morbus Coxarius	..	..	1	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..
Abscessus Psoanus..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	3	..
Tuberculosis	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..

III. *Local Diseases.*																		
1. Nervous System:																		
Encephalitis	..	..	..	..	..	..	..	..	1	..	5	2	..	..	..	..	3	1
Phrenitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Meningitis	..	..	1	1	..	..	..	..	..	..	4	..	..	..	..	..	3	..
Myelitis	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Apoplexia	1	1	1	2	..	1	..	..	1	2	4	3	1	1	..	..	5	3
Paralysis	6	1	14	..	8	..	1	..	4	1	43	2	..	1	16	2	20	..
Delirium Tremens	4	..	9	2	17	1	1	..	..	..	33	3	5	..	12	1	22	..
Mania	..	..	6	..	7	1	..	..	..	..	8	..	..	..	..	..	9	3
Amentia	..	..	8	..	7	..	..	..	3	..	27	2	2	..	16	..	45	..
Fatuitas	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Epilepsia	..	..	29	..	21	..	2	..	3	..	68	1	4	..	38	..	70	1
Convulsio	..	..	2	..	..	..	..	..	..	..	2	..	..	..	2	..	4	..
Cephalæa	..	..	16	..	16	..	9	..	22	..	85	..	1	..	26	..	62	..
Neuralgia	1	..	17	..	22	..	1	..	1	..	31	..	1	..	5	..	25	..
Dysecœa	..	..	2	..	6	..	2	..	2	..	10	..	1	..	14	..	7	..
Otitis	1	..	22	..	23	..	1	..	8	..	113	..	2	..	29	..	79	..
Caligo	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Iritis	..	..	2	..	7	..	..	..	..	..	4	..	1	..	..	..	1	..
Odontalgia	..	..	4	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Cataractes	..	..	1	..	1	..	..	..	..	..	1	..	..	..	1	..	2	..
Amaurosis	..	..	1	..	5	..	..	..	..	..	3	..	..	..	7	..	1	..
Nyctalopia	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Sclerotitis	..	..	..	..	2	..	..	..	..	..	..	..	..	..	1	..	..	..
Myopia	..	..	..	..	1	..	..	..	1	..	2	..	..	..	1	..	19	..
Polypus Auris	..	..	..	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..
Vertigo	..	..	..	..	..	..	..	..	2	..	..	..	..	..	5	..	..	..
Hysteria	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..
Fistula Lachrymalis	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Strabismus	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Polypus Nasi	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..
Chorea	..	..	..	..	..	..	..	..	..	..	1	..	..	..	3	..	2	..
Tetanus	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Trichiasis	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Cæcitas	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	6	..
Staphyloma	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..

Appendix No. I.—*continued.*

	Household Cavalry.		Cavalry.		Royal Artillery.		Military Train.		Foot Guards.		Infantry.		Cavalry Depôts.		Roy. Art. Depôt Brigade.		Infantry Depôt Battalions.	
Strength	1,222		9,884		9,575		1,238		4,317		29,439		759		4,019		15,576	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
2. Circulatory System:																		
Carditis	..	..	1	..	3	..	..	..	1	..	16	4	..	..	..	..	6	..
Pericarditis	..	..	8	1	1	..	3	..	1	1	9	..	..	..	1	1	13	..
Hypertrophia Cordis	..	..	8	..	9	..	2	..	..	1	28	1	..	..	1	..	30	..
Atrophia ,, ...	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Degeneratio ,, ...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..
Morbus Valv: ,, ...	..	..	16	2	15	1	2	..	6	..	76	5	5	1	56	1	123	4
Aneurisma ,, ...	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Aneurisma Aortæ	..	..	1	2	..	..	..	..	..	1	2	5	..	..	..	..	2	2
Aneurisma	..	..	1	..	1	1	1	..	..	1	4	3	..	..	2	1	3	2
Varix	..	..	2	..	13	..	2	..	10	..	44	..	1	..	6	..	28	..
Morbus Cordis	..	..	2	..	..	..	1	..	..	..	4	..	..	..	..	..	10	..
Angina Pectoris	..	..	2	..	3	..	..	..	..	..	1	1	..	..	1	..	1	..
Palpitatio	..	..	3	..	..	..	..	..	..	..	18	..	..	..	..	..	31	..
Syncope	..	..	..	..	..	..	..	..	1	..	3	..	..	..	..	..	3	..
Hæmorrhagia	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Angeioleucitis	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Phlebitis	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	1	..
3. Respiratory System:																		
Laryngitis	..	1	3	..	1	..	..	..	2	..	5	..	..	..	3	..	3	2
Bronchitis Acuta	73	1	417	..	556	5	76	..	287	..	1,525	5	35	1	545	1	929	8
,, Chronica	3	..	54	..	67	1	8	..	48	..	304	8	27	..	97	..	291	5
Pleuritis	2	..	36	..	25	..	6	..	14	1	104	4	1	..	7	..	49	2

Pneumonia	4	..	39	1	31	3	3	..	14	3	142	15	4	..	27	..	70	12
Asthma	..	..	5	..	8	..	..	..	3	..	19	..	..	..	5	..	19	..
Epistaxis	..	..	..	..	1	..	1	..	..	..	3	..	..	..	1	..	2	..
Emphysema	..	..	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	..
Empyema	..	..	..	..	2	1	..	..	..	..	1	..	..	..	1	1	1	2
Pleurodynia	..	..	..	..	..	..	..	..	3	..	1	..	..	..	18	..	..	..
Hydrothorax	..	1	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..
Œdema Glottidis	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Apoplexia Pulmonalis	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1
4. Digestive System:																		
Gastritis	..	..	2	..	2	..	1	1	..	..	3	..	..	..	3	..	5	..
Enteritis	..	..	2	..	3	1	..	..	..	..	8	3	..	..	..	..	4	..
Peritonitis	..	..	4	..	..	..	..	..	1	..	6	2	1	..	2	..	3	1
Obstipatio	..	..	5	..	8	..	3	..	3	..	37	1	..	..	11	..	31	1
Dyspepsia	38	..	105	..	136	..	17	..	75	..	373	..	25	..	84	..	192	..
Colica	4	..	40	..	25	..	4	..	35	..	70	1	2	..	14	..	69	..
Hæmatemesis	..	..	1	..	..	..	..	..	..	..	5	1	..	..	3	..	4	2
Hernia	..	..	23	..	13	..	5	..	3	..	61	..	1	..	19	..	65	..
Hæmorrhois	1	..	55	..	41	..	4	..	23	..	174	..	6	..	9	..	74	..
Fistula in Ano	4	..	7	..	4	..	..	..	1	..	15	..	..	..	10	..	3	..
Splenitis	..	..	2	..	1	..	5	..	..	..	12	1	..	..	4	..	9	..
Hepatitis Acuta	..	..	10	..	14	..	..	..	1	..	42	4	6	..	..	..	27	..
„ Chronica	1	..	17	1	22	2	..	..	..	..	42	1	6	..	41	..	120	6
Icterus	6	..	31	..	34	..	7	..	19	..	102	1	1	..	12	..	38	1
Chololithus	..	..	..	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..
Ascites	..	..	..	..	..	..	..	..	..	..	4	..	..	..	2	..	2	1
Prolapsus Ani	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	2	..
Stomatitis	..	..	2	..	1	..	1	..	1	..	3	..	..	..	4	..	2	..
Pharyngitis	..	..	3	..	2	..	1	..	..	..	4	..	..	..	..	..	..	..
Glossitis	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Fistula Salivaris	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Intussusceptio	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Melæna	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Cirrhosis	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..
Ileus	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..

Appendix No. I.—*continued.*

	Household Cavalry.		Cavalry.		Royal Artillery.		Military Train.		Foot Guards.		Infantry.		Cavalry Depôts.		Roy. Art. Depôt Brigade.		Infantry Depôt Battalions.	
Strength	1,222		9,884		9,575		1,238		4,317		29,439		759		4,019		15,576	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
5. Urinary System:																		
Calculus Vesicæ	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..
Diabetes	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Nephritis	..	..	1	..	4	..	..	..	..	..	6	..	1	..	3	..	10	1
Nephria	..	..	1	..	2	..	..	..	..	..	4	2	..	..	2	..	9	1
Ischuria	..	..	1	..	..	..	..	..	..	..	..	..	..	..	2	..	3	..
Hæmaturia	..	..	..	..	1	..	1	..	..	..	3	..	..	..	1	..	4	..
Lithiasis	..	..	..	..	..	..	..	..	..	..	2	..	1	..	1	..	..	..
Cystitis	..	..	3	..	..	..	..	..	..	..	9	..	..	..	..	..	3	..
Fistula in Perineo	..	..	..	..	..	..	..	..	..	..	6	..	..	..	..	..	2	..
Enuresis	..	..	4	..	5	..	3	..	2	..	23	..	..	..	11	..	53	..
Diuresis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..
Dysuria	..	..	..	..	1	..	..	..	..	..	2	..	..	..	..	..	..	..
Morbus Prostaticus	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
6. Reproductive System:																		
Varicocele	..	..	8	..	3	..	2	..	7	..	5	..	1	..	1	..	2	..
Hydrocele	..	..	5	..	25	..	2	..	3	..	15	..	1	..	7	..	13	..
Orchitis (not Gonorrhœal) ..	5	..	137	..	100	..	17	..	..	..	208	..	5	..	63	..	62	..
Sarcocele	..	..	..	..	1	..	..	..	..	..	6	..	..	..	1	..	..	..
7. Locomotive System:																		
Arthritis	..	..	6	..	5	..	..	..	8	..	20	..	..	..	1	..	13	..

Synovitis	..	..	8	..	10	..	..	..	4	..	27	1	..	..	15	..	27	..
Contractura	..	..	..	..	2	..	..	..	..	..	2	..	..	..	2	..	4	..
Periostitis	..	..	17	..	17	..	..	..	3	..	18	..	..	..	9	..	20	..
Exostosis	..	..	3	..	1	..	..	..	..	..	..	..	..	..	..	..	2	..
Caries	..	..	..	..	5	..	..	..	2	..	2	..	..	..	3	..	6	..
Necrosis	..	..	1	..	3	..	3	..	..	..	6	..	..	..	2	..	4	..
Hydrarthrus	..	..	1	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..
Anchylosis	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Atrophiá musculorum	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	3	..
Curvatura Spinæ	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..
Deformitas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
8. Integumentary System:																		
Urticaria	1	..	6	..	7	..	..	..	1	..	15	..	4	..	1	..	3	..
Eczema	3	..	32	..	41	..	..	..	20	..	166	..	5	..	13	..	53	..
Herpes	..	..	12	..	31	..	3	..	5	..	59	..	..	..	14	..	48	..
Impetigo	1	..	11	..	9	..	6	..	10	..	22	..	1	..	1	..	31	..
Psoriasis	..	..	54	..	26	..	..	..	3	..	67	..	..	..	37	..	75	..
Lichen	..	..	6	..	30	..	..	..	..	..	..	..	..	..	..	..	2	..
Lepra	..	..	3	..	..	..	1	..	..	..	8	..	..	..	1	..	9	..
Ecthyma	..	..	1	..	40	..	1	..	2	..	11	..	..	..	..	..	5	..
Acne	..	..	3	..	2	..	1	..	5	..	9	..	..	..	3	..	3	..
Pityriasis	..	..	1	..	1	..	1	..	..	..	2	..	..	..	6	..	5	..
Rupia	..	..	4	..	4	..	..	..	..	..	8	..	..	..	..	..	13	..
Mentagra	..	..	1	..	..	..	..	..	..	..	2	..	..	..	..	..	2	..
Verrucæ	..	..	1	..	..	..	..	..	..	..	10	..	..	..	..	..	..	..
Morbi Cutis	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Prurigo	..	..	..	..	8	..	..	..	..	..	1	..	..	..	..	..	..	..
Pemphigus	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..
Tinea Capitis	..	..	..	..	..	..	..	..	2	..	1	..	..	..	..	..	..	..
Favus	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..
Roseola	..	..	..	..	..	..	..	..	..	..	5	..	..	..	1	..	3	..
Hordeolum	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Ichthyosis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	..
Pernio	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..
Phlegmon	27	..	744	..	407	..	89	..	147	..	1,088	..	47	..	175	..	926	..

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	Household Cavalry.		Cavalry.		Royal Artillery.		Military Train.		Foot Guards.		Infantry.		Cavalry Depôts.		Roy. Art. Depôt Brigade.		Infantry Depôt Battalions.	
Strength	1,222		9,884		9,575		1,238		4,317		29,439		759		4,019		15,576	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Abscessus	44	..	135	..	161	..	12	..	111	..	431	1	3	..	69	..	137	2
Paronychia	3	..	84	..	49	..	13	..	5	..	127	..	6	..	18	..	64	..
Ulcus	19	..	622	..	398	..	62	..	87	..	1,023	..	25	..	203	..	520	..
IV. *Developmental Diseases.*																		
4. Diseases of Nutrition:																		
Atrophia	..	..	3	..	15	..	..	..	3	..	33	..	..	..	116	..	52	..
Debilitas	..	..	..	..	..	..	..	..	..	..	6	..	..	..	..	..	..	..
V. *Violent Deaths or Diseases.*																		
1. Accidental:																		
Ambustio	2	..	15	..	24	..	4	..	10	..	89	1	..	..	10	..	42	..
Explosio	..	..	1	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..
Gelatio	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Insolatio	..	..	1	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..
Submersio	..	..	..	1	..	2	..	..	..	2	1	6	..	..	..	..	1	4
Asphyxia	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Fractura	6	..	39	1	51	2	4	..	10	1	71	4	3	..	12	1	37	..
Amputatio	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	3	..
Ruptura Tendinis	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" Musculi	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Contusio	57	..	686	1	496	..	64	..	83	..	732	..	39	..	182	..	449	..
Commotio	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..

Vulnus Sclopetarium	..	..	..	..	5	1	2	..	1	..	11	2	..	..	..	..	4	..
„ Incisum	12	..	174	..	152	..	21	..	78	..	305	..	14	..	69	..	165	..
Luxatura	2	..	12	..	6	..	..	..	..	..	22	..	..	..	2	..	10	..
Subluxatio	23	..	177	..	146	..	25	..	98	..	492	..	9	..	65	..	209	..
Vesiculæ Pedis	..	..	10	..	36	..	3	..	15	..	99	..	..	..	3	..	28	..
Per Vias Ferreas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Venenatio	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Morsus Equi	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
„ Canis	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..
3. Homicidal:																		
Vulnus Sclopetarium	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4. Suicidal:																		
Suspendium	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Per Vias Ferreas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Venenatio	..	..	1	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..
Vulnus Sclopetarium	..	1	1	4	..	1	..	..	..	..	2	3	..	..	..	..	..	3
„ Incisum	..	..	..	..	1	1	..	..	..	..	1	2	..	..	..	..	6	1
5. Executio:																		
Suspendium	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
6. Punitus	..	..	13	..	13	..	8	..	3	..	56	..	..	..	4	..	48	..
Simulatio Morbi	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
No appreciable disease	1	..	2	..	1	..	..	..	1	..	7	..	..	..	..	..	2	..
Total	725	14	9,791	46	9,206	47	1,380	4	3,831	44	24,493	197	844	10	5,193	55	14,071	167

APPENDIX No. II.

ABSTRACT, showing the Number of Men belonging to the Regiments serving at Home who were Vaccinated during the Year 1862.

	Results.	In those who bore Marks of previous Small-pox.	In those who bore good Marks of previous Vaccination.	In those who bore doubtful Marks of previous Vaccination.	In those who bore no Marks of previous Vaccination or Small-pox.	Total.
Soldiers, not Recruits	A perfect vaccine pustule	33	202	146	147	528
	A modified ditto	31	280	126	59	496
	A failure in	87	370	133	76	666
	Total	151	852	405	282	1,690
Recruits.	A perfect vaccine pustule	104	1,160	132	159	1,555
	A modified ditto	62	641	67	65	835
	A failure in	104	975	75	79	1,233
	Total	270	2,776	274	303	3,623

APPENDIX No. III.

Abstract, showing the Ages of the Men serving in the different Arms at Home, and the Deaths at each Age in 1862.

	Under 20 Years.		20-24.		25-29.		30-34.		35-39.		40 and Upwards.		Total.	
	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.
Household Cavalry	93	..	346	3	287	2	203	3	158	2	135	4	1,222	14
Cavalry of the Line	1,659	2	4,493	14	1,958	12	935	7	531	5	308	6	9,884	46
Royal Artillery ..	1,526	2	4,327	14	2,181	15	1,299	12	190	4	52	..	9,575	47
Military Train ..	226	..	586	1	329	1	60	..	20	1	17	1	1,238	4
Foot Guards.. ..	529	7	1,269	13	1,462	12	646	8	356	3	55	1	4,317	44
Infantry Regiments	4,427	9	12,420	69	6,251	51	4,004	39	2,036	25	301	4	29,439	197
Total	8,460	20	23,441	114	12,468	93	7,147	69	3,291	40	868	16	55,675	352
Cavalry Depôts ..	77	..	369	5	159	..	45	..	34	3	75	2	759	10
Depôt Brigade, R.A.	879	8	2,013	13	766	18	231	8	100	5	30	3	4,019	55
Depôt Battalions ..	3,748	15	4,595	51	2,760	31	2,200	28	1,761	32	512	10	15,576	167
Total of Depôts..	4,704	23	6,977	69	3,685	49	2,476	36	1,895	40	617	15	20,354	232

APPENDIX No. IV.

ABSTRACT, showing the Number of Recruits Inspected, and the Number found unfit for Service in each of the Recruiting Districts during the year 1862.

Districts.		Primary Inspections.	Secondary Inspections.		Total.
			Had been previously examined by Staff Surgeon or other Army Medical Officer.	Had been previously examined by Private Medical Practitioner,	
London ..	Inspected	2,001	77	244	2,322
	Rejected	986	13	69	1,068
Liverpool..	Inspected	658	64	349	1,071
	Rejected	357	14	116	487
Bristol ..	Inspected	377	110	480	967
	Rejected	126	24	140	290
York and Leeds ..	Inspected	230	73	409	712
	Rejected	82	7	61	150
Edinburgh	Inspected	306	4	39	349
	Rejected	126	..	7	133
Glasgow ..	Inspected	969	..	10	979
	Rejected	349	..	2	351
Dublin ..	Inspected	566	7	104	677
	Rejected	286	3	29	318
Cork ..	Inspected	168	53	91	312
	Rejected	95	9	30	134
Belfast ..	Inspected	178	5	112	295
	Rejected	111	..	39	150
Total	Inspected ..	5,453	393	1,838	7,684
	Rejected ..	2,518	70	493	3,081

APPENDIX No. V.

Abstract, showing the Native Country of the Recruits inspected in each of the Districts in 1862.

Districts.	England.		Wales.		Scotland.		Ireland.		British Colonies or Foreign Countries.	
	Inspected.	Rejected.	Inspected.	Rejected.	Inspected.	Rejected.	Inspected.	Rejected.	Inspected.	Rejected.
London ..	2,020	936	16	6	58	23	219	100	9	3
Liverpool ..	633	284	1	..	46	19	379	178	12	6
Bristol ..	797	242	73	19	9	2	82	25	6	2
York & Leeds	552	121	..	..	24	5	136	24	..	..
Edinburgh ..	13	4	..	..	293	117	41	11	2	1
Glasgow ..	39	15	..	..	712	256	227	80	1	..
Dublin ..	19	4	..	..	2	1	648	312	8	1
Cork.. ..	2	2	..	..	3	2	304	127	3	3
Belfast ..	9	7	..	..	9	4	275	138	2	1
Total ..	4,084	1,615	90	25	1,156	429	2,311	995	43	17

APPENDIX No. VI.

ABSTRACT, showing the Number of Recruits Inspected in 1862, at the following Ages and Heights.

Age and Country.	Under 5 ft. 3 in.	From 5 ft. 3 in. to 5 ft. 4 in.	From 5 ft. 4 in. to 5 ft. 5 in.	From 5 ft. 5in. to 5 ft. 6 in.	From 5 ft. 6 in. to 5 ft. 7 in.	From 5 ft. 7 in. to 5 ft. 8 in.	From 5 ft. 8 in. to 5 ft. 9 in.	From 5 ft. 9 in. to 5 ft. 10 in.	From 5 ft. 10in. to 5 ft. 11 in.	From 5 ft. 11 in. to 6 ft.	Upwards of 6 ft.	Total.
Boys under 17—												
England ...	226	1	2	1	3	...	1	1	...	1	...	236
Scotland ...	3	...	...	...	...	...	...	...	...	...	...	3
Ireland ...	89	3	1	4	...	1	...	...	...	...	...	98
From 17 to 18—												
England ...	...	5	24	61	82	19	5	1	...	...	...	197
Scotland ...	...	...	2	1	29	9	...	...	...	...	...	41
Ireland ...	...	...	2	2	36	3	4	...	1	...	...	48
From 18 to 19—												
England ...	...	23	153	144	438	294	92	48	26	9	3	1,230
Scotland ...	...	...	19	22	209	97	43	11	8	...	...	409
Ireland ...	...	...	40	37	174	69	26	11	4	...	...	361
From 19 to 20—												
England ...	...	10	60	85	285	229	121	50	22	14	8	884
Scotland ...	...	...	8	15	77	60	30	13	5	6	1	215
Ireland ...	...	...	8	15	65	66	23	16	11	3	1	208
From 20 to 21—												
England ...	1	3	29	61	147	153	109	68	33	13	3	620
Scotland ...	...	...	6	2	56	43	24	19	10	4	3	167
Ireland ...	...	...	11	12	61	41	22	15	3	3	...	168
From 21 to 22—												
England ...	...	...	23	41	142	140	77	58	27	7	3	518
Scotland ...	...	...	3	3	43	30	21	20	6	5	2	133
Ireland ...	...	...	5	1	24	27	17	6	4	3	...	87
From 22 to 23—												
England ...	...	2	9	24	121	122	72	36	14	6	2	408
Scotland ...	...	...	1	3	32	23	22	14	3	2	4	104
Ireland ...	...	...	6	8	29	14	11	8	3	3	...	82
From 23 to 24—												
England ...	...	1	5	30	82	97	70	35	20	5	...	345
Scotland ...	...	...	3	2	14	15	17	18	5	1	4	79
Ireland ...	...	...	1	4	21	20	5	8	3	1	1	64
From 24 to 25—												
England ...	2	2	10	15	83	98	73	39	19	9	7	357
Scotland ...	...	...	1	5	38	24	14	26	2	3	2	115
Ireland ...	...	...	4	6	16	25	19	16	7	2	2	97
Upwards of 25—												
England ...	1	1	10	18	52	61	58	32	25	13	6	277
Scotland ...	...	...	4	2	11	17	13	9	5	1	...	62
Ireland ...	...	...	5	3	16	15	16	11	3	1	1	71
Total ...	322	51	455	627	2,386	1,812	1,005	589	269	115	53	7,684

APPENDIX No. VII.

ABSTRACT, showing the Number of Recruits Inspected in 1862, at the following Weights and Ages.

Ages and Country.	Under 100 lbs.	From 100 lbs. to 110 lbs.	From 110 lbs. to 120 lbs.	From 120 lbs. to 130 lbs.	From 130 lbs. to 140 lbs.	From 140 lbs. to 150 lbs.	From 150 lbs. to 160 lbs.	From 160 lbs. to 170 lbs.	From 170 lbs. and upwards.	Total.
Boys under 17—										
England	220	9	2	1	3	...	1	...	...	236
Scotland	3	...	...	...	...	...	...	...	...	3
Ireland	85	9	4	...	...	...	...	...	...	98
From 17 to 18—										
England	...	4	47	62	57	25	2	...	...	197
Scotland	...	3	24	9	5	...	...	...	...	41
Ireland	...	...	13	14	16	4	1	...	...	48
From 18 to19—										
England	4	13	242	407	340	154	50	16	4	1,230
Scotland	...	6	94	156	111	34	8	...	...	409
Ireland	...	5	78	141	85	41	9	1	1	361
From 19 to 20—										
England	1	2	83	224	320	167	56	27	4	884
Scotland	...	1	30	60	80	32	10	2	...	215
Ireland	...	2	6	49	79	44	22	6	...	208
From 20 to 21—										
England	...	1	46	141	174	156	76	21	5	620
Scotland	...	7	34	55	40	16	13	2	...	167
Ireland	...	...	7	36	61	47	12	4	1	168
From 21 to 22—										
England	...	...	28	98	174	124	48	39	7	518
Scotland	...	6	29	39	35	16	8	...	...	133
Ireland	...	...	7	12	28	27	9	3	1	87
From 22 to 23—										
England	...	1	18	82	120	100	55	27	5	408
Scotland	...	4	24	27	27	13	6	2	1	104
Ireland	...	...	2	21	20	24	12	1	2	82
From 23 to 24—										
England	...	1	22	50	94	90	54	27	7	345
Scotland	...	4	11	23	24	8	7	2	...	79
Ireland	...	...	1	11	19	16	13	4	...	64
From 24 to 25—										
England	...	1	10	54	98	96	63	28	7	357
Scotland	...	4	21	30	27	17	11	4	1	115
Ireland	...	...	6	9	31	24	19	7	1	97
Upwards of 25—										
England	3	4	10	48	64	69	43	26	10	277
Scotland	...	2	8	21	15	9	4	3	...	62
Ireland	...	...	2	9	28	23	7	2	...	71
Total	316	89	909	1,889	2,175	1,376	619	254	57	7,684

APPENDIX No. VIII.

ABSTRACT, showing the State of Education of 7,684 Recruits examined at the various Recruiting Districts during the Year 1862.

Districts.	Well Educated.	Able to Write.	Able to Read only.	Unable to Read.	Total.
London	309	1,533	61	419	2,322
Liverpool	204	476	62	329	1,071
Bristol	..	708	8	251	967
York and Leeds ..	2	439	57	214	712
Edinburgh	2	280	31	36	349
Glasgow	24	597	177	181	979
Dublin	3	478	30	166	677
Cork	23	107	30	152	312
Belfast	..	131	69	95	295
Total	567	4,749	525	1,843	7,684
Country:					
England	515	3,156	188	1,213	5,072
Scotland	26	877	208	217	1,328
Ireland	26	716	129	413	1,284
Total	567	4,749	525	1,843	7,684

APPENDIX No. IX.

Abstract, showing the Admissions into Hospital and Deaths among the Troops serving in the Mediterranean in the year 1862.

Stations	Gibraltar.		Malta.		Ionian Islands.		Native Troops. R. Malta Fencibles.	
Strength	5,494		5,958		3,985		607	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
I. *Zymotic Diseases.*								
1. Miasmatic Diseases:								
Variola	..	..	5	1	..	..	..	..
Varioloides	..	..	2	1	..	..	1	..
Varicella	1	..	..	..	..	..	..	..
Morbilli	..	..	1	..	2	..	14	..
Scarlatina	3	..	..	..	..	..	..	..
Tonsillitis	94	..	71	..	104	..	22	..
Influenza	16	..	17	..	20	..	..	..
Ophthalmia	211	..	571	..	209	..	35	..
Erysipelas	8	..	3	..	3	..	..	..
Furunculus	40	..	13	..	50	..	..	..
Anthrax	6	..	4	..	..	..	..	..
Dysenteria Acuta	44	1	55	3	4	..	..	..
„ Chronica	1	..	13	..	..	..	..	..
Diarrhœa	239	..	228	..	97	..	19	..
Cholera	..	..	1	..	..	..	..	..
Febris Intermittens	41	1	10	..	46	..	..	..
„ Remittens	43	..	1	..	16	1	..	..
„ Typhoides	17	7	21	9	2	..	..	..
„ Continua	547	9	823	12	629	10	10	..
Rheumatismus Acutus	168	..	105	..	70	2	48	..
„ Chronicus	82	..	182	..	43	..	..	..
Parotitis	2	..	1	..	..	..	..	..
2. Enthetic Diseases:								
Syphilis Primaria	258	..	47	..	83	..	13	..
„ Secundaria	80	..	21	..	63	..	5	..
Iritis Syphilitica	5	..	2	..	10	..	..	..
Bubo	69	..	24	..	66	..	..	..
Gonorrhœa	547	..	178	..	174	..	21	..
Phymosis, &c.	3	..	2	..	4	..	..	..
Orchitis (Gonorrhœal)	27	..	7	..	13	..	4	..
Strictura Urethræ	17	..	14	..	10	..	..	..
Verrucæ	3	..	..	..	2	..	..	..
Ophthalmia (Gonorrhœal)	2	..	..	..	..	..	..	..
3. Dietic Diseases:								
Scorbutus	1	..	2	..	2	..	..	..
Purpura	1	..	4	..	..	..	..	..
Ebriositas	49	..	53	2	19	..	..	..
Bronchocele	..	..	1	..	..	..	..	..
4. Parasitic Diseases:								
Aphthæ	1	..	..	..	..	..	..	..
Porrigo	5	..	9	..	2	..	..	..
Scabies	8	..	4	..	1	..	1	..

Appendix No. IX.—*continued.*

Stations	Gibraltar.		Malta.		Ionian Islands.		Native Troops. R. Malta Fencibles.	
Strength	5,494		5,958		3,985		607	
Diseases.	Admitted.	Died.	Admitted	Died.	Admitted.	Died.	Admitted.	Died.
Tænia Solium	39	..	56	..	9	..	..	..
Ascaris Vermicularis	1	..	5	..	..	..	..	..
Ascaris Lumbricoides	..	..	..	..	4	..	..	..
II. *Constitutional Diseases.*								
1. Diathetic Diseases:								
Lumbago	10	..	12	..	1	..	..	..
Anæmia	..	..	14	1	1	..	..	..
Anasarca	3	..	5	..	2	2	..	..
Tumores	4	..	4	..	1	..	..	..
Scirrhoma	..	1	..	..	..	..	..	..
Gangræna	..	..	1	..	..	..	..	..
Lupus	4	..	..	..	..	..	..	..
Podagra	1	..	..	..	2	..	..	..
2. Tubercular Diseases:								
Scrofula	7	..	7	..	13	..	..	..
Phthisis Pulmonalis	18	2	44	5	15	2	4	1
Hæmoptysis	12	1	16	..	6	1	2	..
Morbus Coxarius	1	..	..	..	..	..	..	..
III. *Local Diseases.*								
1. Of the Nervous System:								
Myelitis	..	..	..	..	1	..	..	..
Meningitis	2	1	1	..	..	..	..	..
Hydrocephalus	..	..	..	..	..	..	1	1
Apoplexia	1	1	..	1	..	..	..	..
Paralysis	4	..	10	..	2	..	..	..
Delirium Tremens	4	..	10	..	5	..	..	..
Mania	2	..	1	..	8	..	3	..
Améntia	3	..	5	..	4	..	1	..
Epilepsia	11	..	20	1	10	..	..	..
Chorea	1	..	1	..	..	..	..	..
Convulsio	7	..	..	..	..	..	2	..
Cephalæa	16	..	5	..	8	..	3	..
Neuralgia	8	..	9	..	7	..	..	..
Dysecœa	1	..	1	..	1	..	..	..
Otitis	19	..	14	..	27	..	2	..
Amaurosis	4	..	2	..	2	..	..	..
Pterygium	1	..	..	..	..	..	..	..
Cæcitas	..	..	1	..	..	..	..	..
Iritis	..	..	1	..	..	..	..	..
Cataractes	..	..	1	..	..	..	..	..
2. Of the Circulatory System:								
Carditis	1	..	..	..	..	..	..	..
Pericarditis	..	..	..	..	3	1	1	1
Hypertrophia cordis	7	..	5	..	2	..	1	..
Morbus Valv: Cordis	6	2	8	1	9	..	..	..
Aneurisma Aortæ	..	1	3	..	..	..	..	..
Aneurisma	1	..	..	..	..	..	..	..

Appendix No. IX.—*continued.*

Stations	Gibraltar.		Malta.		Ionian Islands.		Native Troops R. Malta Fencibles.	
Strength	5,494		5,958		3,985		607	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Varix	7	..	3	..	..	..	1	..
Palpitatio Cordis	18	..	..	..	..	..	..	..
Syncope	..	..	1	..	1	..	..	..
3. Of the Respiratory System:								
Laryngitis	..	..	2	..	..	..	..	..
Bronchitis Acuta	183	..	97	2	94	1	35	..
„ Chronica	85	..	55	..	15	..	..	..
Pleuritis	15	..	7	..	4	..	..	..
Pneumonia	9	..	12	2	21	1	..	..
Asthma	1	..	5	..	..	..	..	..
Dyspnœa	1	..	..	..	..	..	..	..
Emphysema	..	..	..	..	1	..	..	..
Epistaxis	..	..	2	..	..	..	..	..
4. Of the Digestive System:								
Glossitis	..	..	..	..	1	..	..	..
Pharyngitis	..	..	..	..	1	..	..	..
Stomatitis	1	..	1	..	..	..	..	..
Ranula	..	..	3	..	..	..	..	..
Gastritis	..	..	2	..	..	..	..	..
Enteritis	..	..	..	..	1	..	..	..
Peritonitis	..	..	1	..	..	..	..	..
Obstipatio	18	..	1	..	15	..	..	..
Dyspepsia	101	..	64	..	91	..	91	..
Colica	23	..	17	..	16	..	1	..
Hæmatemesis	2	..	1	..	..	..	..	..
Hernia	12	..	3	..	1	..	..	..
Hæmorrhois	22	..	9	..	23	..	..	..
Prolapsus Ani	2	..	..	..	..	..	..	..
Fistula in ano	6	..	5	..	4	..	..	..
Splenitis	3	..	..	..	1	..	..	..
Hepatitis Acuta	1	..	2	..	6	..	4	1
„ Chronica	16	1	9	3	..	..	..	..
Icterus	37	..	33	..	5	..	..	..
Ascites	2	..	..	..	..	..	..	..
5. Of the Urinary System:								
Nephritis	..	..	3	..	2	..	..	..
Nephria	1	..	3	1	..	..	..	..
Ischuria	2	..	4	..	..	..	1	..
Hæmaturia	5	..	2	..	..	..	..	..
Enuresis	10	..	1	..	2	..	..	..
Calculus Vesicæ	1	1	..	..	..	..	..	..
Diabetes	..	..	..	..	1	..	..	..
6. Of the Reproductive System:								
Varicocele	2	..	1	..	..	..	..	..
Hydrocele	8	..	11	..	2	..	..	..
Orchitis (not Gonorrhœal)	124	..	71	..	33	..	2	..
Sarcocele	1	..	..	..	..	..	..	..

Appendix No. IX.—*continued.*

Stations	Gibraltar.		Malta.		Ionian Islands.		Native Troops. R. Malta Fencibles.	
Strength	5,494		5,958		3,985		607	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
7. Of the Locomotive System:								
Arthritis	3	..	1	..	..	..	..	..
Synovitis	23	..	17	..	7	..	..	..
Hydrarthrus	1	..	..	..	..	..	..	..
Contractura	1	..	1	..	1	..	..	..
Periostitis	4	..	..	..	2	..	..	..
Caries	..	..	3	..	..	..	..	..
Necrosis	..	..	1	..	..	..	..	..
Deformitas	..	..	1	..	..	..	..	..
8. Of the Integumentary System:								
Urticaria	2	..	..	..	1	..	..	..
Eczema	11	..	8	..	15	..	..	..
Herpes	8	..	12	..	3	..	8	..
Impetigo	..	..	2	..	6	..	..	..
Psoriasis	15	..	4	..	9	..	..	..
Lichen	3	..	..	..	..	..	..	..
Mentagra	1	..	..	..	2	..	..	..
Rupia	1	..	..	..	1	..	..	..
Lepra	1	..	2	..	..	..	..	..
Hordeolum	2	..	1	..	..	..	..	..
Pityriasis	..	..	2	..	1	..	..	..
Ecthyma	..	..	4	..	1	..	..	..
Acne	..	..	..	..	1	..	..	..
Pemphigus	..	..	..	..	2	..	..	..
Phlegmon	377	..	280	..	248	..	..	..
Abscessus	77	..	56	..	53	..	58	..
Paronychia	31	..	29	..	18	..	..	..
Ulcus	226	..	129	..	143	..	21	..
IV. *Developmental Diseases.*								
4. Diseases of Nutrition:								
Atrophia	14	..	13	..	14	..	..	..
Fatuitas	1	..	..	..	..	..	..	..
V. *Violent Deaths or Diseases.*								
1. Accidental:								
Ambustio	7	..	13	..	7	..	..	..
Explosio	3	..	..	..	..	..	..	..
Insolatio	..	..	1	..	..	..	..	..
Submersio	..	..	..	1	..	1	..	..
Fractura	19	1	17	1	15	..	..	..
Amputatio	2	1	2	..	1	..	..	..
Contusio	181	..	174	..	145	..	41	..
Commotio	..	..	3	1	..	..	..	..
Vulnus Sclopetarium	1	..	2	..	1	..	..	..
„ Incisum	105	..	58	..	59	..	25	..
Luxatura	2	..	4	..	1	..	..	..
Subluxatio	94	..	77	..	64	..	..	..
Vesiculæ Pedis	16	..	17	..	12	..	..	..
Venenatio	..	..	..	..	1	..	..	..

Appendix No. IX.—*continued.*

Stations	Gibraltar.		Malta.		Ionian Islands.		Native Troops. R. Malta Fencibles.	
Strength	5,520		6,185		4,064		607	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Morsus Hominis	1	..	..	..	..	..	..	..
„ Canis	..	..	..	..	1	..	..	..
„ Culicis	2	..	..	..	..	..	..	..
3. Homicidal:								
Vulnus Sclopetarium	..	1	..	..	..	..	..	..
4. Suicidal:								
Vulnus Sclopetarium	1	3	..	1	1	..	..	..
Venenatio	1	..	..	..	..	..	..	..
Vulnus Incisum	2	..	2	..	..	..	..	..
5. Executio:								
Suspendium	..	1	..	..	..	..	..	..
6. Punitus	22	..	16	..	7	..	1	..
Diseases not specified	8	..	..	..	..	..	..	..
Total	4,826	36	4,140	49	3,066	22	502	4

Causes of the Deaths among the Invalids.

	From Gibraltar.	From Malta.	From the Ionian Islands.
Phthisis Pulmonalis	2	3	1
Dementia	..	1	..
Hepatitis Chronica	..	1	..
Nephria	1	..	..
Periostitis Chronica	1	..	..
Total	4	5	1

APPENDIX No. X.

ABSTRACT, showing the Diseases of the Men sent home as Invalids from the Mediterranean during the Year 1862.

Stations	Gibraltar.		Malta.		Ionian Islands.	
Average Strength ..	5,494		5,958		3,985	
Sent Home for	Discharge.	Change of Climate.	Discharge.	Change of Climate.	Discharge.	Change of Climate.
Ophthalmia	1	7	7	15	5	2
Dysenteria Acuta ..	..	3	..	..	..	..
,, Chronica ..	..	2	..	1	..	..
Diarrhœa	..	..	..	..	1	..
Febris Remittens ..	..	1	..	..	..	..
,, Typhoides ..	..	1	..	..	..	..
,, Continua.. ..	..	22	..	2	..	..
Rheumatismus Acutus ..	1	8	..	..	..	1
,, Chronicus	1	5	..	2	1	2
Syphilis Secundaria ..	1	6	..	1	1	2
Iritis Syphilitica ..	3	..	..	..	..	..
Bubo	..	..	..	..	..	1
Strictura Urethræ ..	..	1	..	..	..	1
Purpura	..	..	..	1	..	..
Bronchocele	1	..	..	..	..	..
Anasarca	1	..	..	..	..	..
Scrofula	..	2	..	..	..	..
Phthisis Pulmonalis ..	7	2	16	6	1	..
Hæmoptysis	..	2	..	..	10	3
Morbus Coxarius ..	..	1	..	..	..	..
Meningitis	..	..	1	..	..	..
Myelitis	..	..	..	..	1	..
Paralysis	..	2	1	1	..	..
Mania	2	2	1	..	..	..
Amentia	5	..	3	1	1	..
Epilepsia	4	..	4	..	2	..
Convulsio	..	1	..	..	..	..
Cephalæa	..	2	..	..	..	..
Neuralgia	..	..	..	..	..	1
Otitis	1	..	..	..	3	..
Amaurosis	..	2	1	1	..	..
Cæcitas	1	..	..	1	..	..
Carditis	..	1	..	..	..	..
Hypertrophia Cordis ..	1	1	..	..	..	2
Morbus Valv: Cordis ..	3	..	3	..	1	1
Palpitatio Cordis ..	..	3	..	..	..	..
Aneurisma Aortæ ..	..	..	1	..	..	..
Varix	2	..	..	..	1	..
Bronchitis Acuta ..	1	3	..	..	..	3
,, Chronica ..	3	7	1	2	1	1
Pleuritis	..	2	..	..	..	..
Pneumonia	..	1	..	..	..	3
Asthma	..	..	1	1	..	..
Obstipatio	..	..	..	..	1	..
Dyspepsia	..	3	..	1	2	..
Hæmatemesis	..	1	..	..	..	..
Hernia	2	..	1	..	2	..
Fistula in Ano	..	2	..	..	..	..
Hepatitis Acuta	..	..	..	..	1	..

Appendix No. X.—*continued.*

Stations	Gibraltar.		Malta.		Ionian Islands.	
Average Strength ..	5,494		5,958		3,985	
Sent Home for ..	Dis-charge.	Change of Climate.	Dis-charge.	Change of Climate.	Dis-charge.	Change of Climate.
Hepatitis Chronica ..	..	3	1	2	..	..
Ascites	..	1	..	..	..	..
Nephria	..	1	..	..	..	..
Diabetes	..	..	..	..	1	..
Orchitis (not Gonorrhœal)	..	..	..	..	..	1
Synovitis	..	2	1	..	..	..
Contractura	1	..	..	..	..	..
Periostitis	..	1	..	..	..	..
Deformitas	..	..	1	..	1	..
Psoriasis	..	1	..	..	1	..
Mentagra	..	1	..	..	..	..
Phlegmon	..	1	..	..	..	..
Ulcus	..	4	1	1	1	..
Atrophia	1	4	..	..	1	1
Fatuitas	1	..	..	..	..	..
"Worn out"	..	..	..	..	1	..
Fractura	..	..	2	..	..	..
Vulnus Sclopetarium ..	..	..	..	..	..	1
Subluxatio	..	..	..	..	1	..
Total	44	115	47	39	42	26

APPENDIX No. XI.

ABSTRACT, showing the Ages of the Troops serving in the Mediterranean Commands, and the Deaths at each Age, during the Year 1862.

		Under 20 Years.		20–24.		25–29.		30–34.		35–39.		40 and upwards.	
		Strength on 1 April.	Deaths during Year.	Strength on 1 April.	Deaths during Year.	Strength on 1 April.	Deaths during Year.	Strength on 1 April.	Deaths during Year.	Strength on 1 April.	Deaths during Year.	Strength on 1 April.	Deaths during Year.
	Royal Artillery	179	..	955	4	567	10	214	5	54	1	5	..
	Royal Engineers	28	..	385	..	217	5	65	2	20	..	2	..
Gibraltar.. ..	2nd Battalion 7th Regiment..	18	..	68	4	504	3	258	1	13	..	8	..
	2nd „ 8th „ ..	42	..	529	5	181	..	76	..	25	..	4	..
	100th Regiment	21	1	403	..	282	1	124	1	5	1	..	..
Gibraltar and Malta	2nd Battalion 3rd Regiment..	26	..	654	3	151	..	25	..	9	..	1	..
	1st „ 25th „ ..	48	..	309	..	252	1	119	2	74	2	29	..
Malta	2nd „ 15th „ ..	147	..	460	6	165	2	59	1	25	..	5	..
	1st „ 22nd „ ..	46	..	572	4	118	4	90	1	12	..	..	..
	2nd „ 22nd „ ..	48	1	493	2	196	2	77	..	34	..	6	..
	2nd „ 23rd „ ..	9	..	433	7	293	1	114	3	16	..	8	1
	4th „ Rifle Brigade ..	24	..	515	5	260	1	69	..	5	..	1	..
Gibraltar and Ionian Islands .	2nd „ 2nd Regiment..	20	..	632	2	153	..	29	..	7	..	4	..
	2nd „ 6th „ ..	46	2	570	3	196	1	57	..	6	1	2	..
Ionian Islands ..	2nd „ 4th „ ..	85	..	556	3	154	1	56	3	11	..	2	..
	1st „ 9th „ ..	30	..	417	..	287	..	92	1	37	..	1	..
	2nd „ 9th „ ..	64	..	574	2	156	2	69	1	13	..	..	..
Total	.. .. ..	881	4	8,525	50	4,132	34	1,593	21	366	5	78	1

APPENDIX No. XII.

ABSTRACT showing the Admissions into Hospital and Deaths among the Troops serving in British America in the year 1862.

Stations	Bermuda		Nova Scotia, &c.				Canada.		New-foundland		British Columbia.	
			Troops *en route.*		Perma-nent Force.							
Average Annual Strength ..	1,275		477		3,478		10,763		273		129	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
I. *Zymotic Diseases.*												
1. Miasmatic Diseases:												
Variola	..	..	..	..	..	..	3	..	..	..	..	..
Morbilli	..	..	..	..	2	..	25	..	..	..	..	..
Scarlatina	..	..	..	..	..	..	15	..	..	..	..	..
Tonsillitis	14	..	34	..	87	..	358	..	11	..	..	..
Influenza	21	..	3	..	87	..	16	..	7	..	24	..
Ophthalmia	51	..	3	..	56	..	144	..	..	..	..	..
Erysipelas	2	..	1	1	17	1	44	1	1	..	..	..
Furunculus	8	..	..	..	11	..	51	..	1	..	..	..
Anthrax	2	..	1	..	1	..	4	..	..	..	..	..
Dysenteria Acuta ..	25	..	..	..	..	..	13	..	..	..	..	..
Diarrhœa	65	..	7	..	46	..	238	..	7	..	9	..
Cholera	..	..	..	..	1	..	4	..	..	..	..	..
Febris Intermittens	3	..	..	..	11	..	61	..	1	..	..	..
„ Remittens ..	..	..	..	..	1	..	18	2	..	..	..	..
„ Typhoides ..	..	..	..	..	..	..	5	2	..	..	..	..
„ Typhus ..	..	..	..	..	..	..	1	1	..	..	..	..
„ Continua ..	21	1	8	..	66	4	247	3	1	..	..	..
Rheumatismus Acutus	24	..	22	..	81	..	207	1	8	..	..	..
„ Chronicus	10	..	1	..	65	..	107	..	3	..	4	..
Parotitis	1	..	..	..	3	..	10	..	..	..	..	..
Diphtheria	..	..	..	..	..	..	3	1	..	..	..	..
2. Enthetic Diseases:												
Syphilis Primaria ..	19	..	37	..	197	..	628	..	3	..	..	..
„ Secundaria ..	16	..	10	..	60	..	240	..	11	..	..	..
Iritis Syphilitica ..	1	..	1	..	1	..	13	..	..	..	..	..
Bubo	11	..	14	..	61	..	103	..	..	..	3	..
Gonorrhœa	34	..	19	..	211	..	483	..	11	..	8	..
Phymosis, &c... ..	2	..	1	..	2	..	2	..	..	..	..	..
Orchitis (Gonorrhœal)	4	..	4	..	22	..	46	..	..	..	..	..
Strictura Urethræ ..	2	..	2	..	7	..	41	1	..	..	..	..
Verrucæ	..	..	..	..	5	..	5	..	..	..	..	..
Ulcus Penis	..	..	..	..	..	..	3	..	..	..	..	..
3. Dietic Diseases:												
Scorbutus	2	..	..	..	3	..	4	..	..	..	..	..
Bronchocele	1	..	..	..	..	..	..	..	..	..	..	..
Ebriositas	66	1	7	3	39	4	169	1	8	1	1	..
4. Parasitic Diseases:												
Porrigo	1	..	..	..	10	..	8	..	..	..	..	..
Scabies..	6	..	7	..	52	..	68	..	3	..	..	..

Appendix No. XII.—*continued.*

Stations	Bermuda.		Nova Scotia, &c.				Canada.		Newfoundland		British Columbia.	
			Troops *en route.*		Permanent Force.							
Average Annual Strength ..	1,275		477		3,478		10,763		273		129	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Tænia Solium.. ..	2	..	..	..	3	..	3	..	..	..	..	..
Dracunculus	..	..	..	..	..	..	1	..	..	..	..	..
Ascaris Lumbricoides .	..	..	..	..	..	..	1	..	..	..	..	..
II. *Constitutional Diseases.*												
1. Diathetic Diseases:												
Lumbago	..	..	..	..	..	..	9	..	..	..	1	..
Anæmia	..	..	..	..	1	..	1	..	..	..	..	..
Anasarca	..	..	..	..	2	1	4	..	..	..	1	1
Tumores	2	..	..	..	..	..	2	..	..	..	..	..
Podagra	..	..	..	..	..	..	4	..	..	..	..	..
Carcinoma	1	1	..	..	1	1	1	..	..	..	..	..
2. Tubercular Diseases:												
Scrofula	5	..	6	..	6	..	11	..	..	..	..	..
Phthisis Pulmonalis ..	6	1	1	..	14	4	48	8	..	..	..	..
Hæmoptysis	3	..	..	..	3	..	26	..	..	..	..	..
III. *Local Diseases.*												
1. Of the Nervous System:												
Encephalitis	..	..	..	..	..	..	1	1	..	..	..	..
Meningitis	..	..	..	..	..	..	2	1	..	..	..	..
Apoplexia	1	1	..	..	..	..	2	3	..	..	..	..
Paralysis	1	1	..	..	1	..	13	1	..	..	..	..
Delirium Tremens ..	6	..	4	1	15	1	38	4	3	1	..	..
Mania	..	..	..	..	2	..	2	..	..	..	..	..
Amentia	..	..	..	..	2	..	8	..	3	..	..	..
Epilepsia	1	..	1	..	6	..	25	..	..	..	..	..
Convulsio	..	..	..	..	1	..	..	..	..	..	..	..
Cephalæa	2	..	1	..	7	..	24	..	..	..	..	..
Neuralgia	4	..	..	..	2	..	16	..	1	..	..	..
Dysecœa	4	..	..	..	..	..	4	..	..	..	..	..
Otitis	11	..	1	..	7	..	28	..	..	..	..	..
Vertigo	..	..	..	..	..	..	1	..	..	..	..	..
Aphonia	..	..	..	..	..	..	1	..	..	..	..	..
Cæcitas	4	..	..	..	..	..	2	..	..	..	..	..
Iritis	..	..	..	..	..	..	2	..	..	..	..	..
Amaurosis	1	..	..	..	..	..	2	..	..	..	..	..
Myopia	..	..	..	..	..	..	1	..	..	..	..	..
Polypus Auris.. ..	..	..	..	..	..	..	1	..	..	..	..	..
2. Of the Circulatory System:												
Carditis	2	..	..	..	..	..	1	..	..	..	..	..
Pericarditis	..	..	1	1	1	..	4	..	..	..	..	..
Hypertrophia Cordis ..	..	..	..	..	2	2	5	..	..	..	..	..
Morbus Valv: Cordis ..	7	1	2	..	7	1	8	1	..	..	..	..

Appendix No. XII.—*continued.*

Stations	Bermuda.		Nova Scotia, &c. Troops *en route.*		Nova Scotia, &c. Permanent Force.		Canada.		Newfoundland		British Columbia	
Average Annual Strength ..	1,275		477		3,478		10,763		273		129	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Aneurisma Aortæ ..	..	..	..	..	..	1	..	1	..	..	..	..
Aneurisma	1	1	..	..	1	1	2	3	..	..	..	..
Varix	1	..	..	..	..	..	8	..	..	..	..	..
Syncope	..	..	..	..	..	..	3	..	..	..	..	..
Phlebitis	..	..	..	..	..	..	1	..	..	..	..	..
3. Of the Respiratory System:												
Laryngitis	..	..	..	..	1	..	2	1	..	..	..	..
Bronchitis Acuta ..	80	..	46	1	65	2	375	3	16	..	..	..
„ Chronica ..	3	..	3	..	41	..	92	..	3	..	2	..
Pleuritis	4	..	8	..	10	..	52	2	5	..	..	..
Pneumonia	1	..	16	3	14	1	157	5	4	..	..	..
Asthma	..	..	..	..	..	..	3	..	..	..	..	..
Epistaxis	..	..	..	..	..	..	1	..	..	..	..	..
Pleurodynia	..	..	..	..	2	..	..	..	..	..	..	..
4. Of the Digestive System:												
Gastritis	1	..	..	..	..	..	3	1	..	..	..	..
Enteritis	1	..	1	1	..	..	4	..	..	..	..	..
Peritonitis	1	1	..	..	1	..	2	2	..	..	..	..
Obstipatio	..	..	..	..	2	..	11	..	..	..	..	..
Dyspepsia	36	..	3	..	29	..	296	..	3	..	..	..
Colica	14	..	1	..	16	..	21	..	2	..	..	..
Hæmatemesis ..	..	..	..	..	..	..	3	..	..	..	..	..
Hernia	..	..	..	..	1	..	7	..	..	..	..	..
Hæmorrhois ..	6	..	1	..	12	..	38	..	..	..	..	..
Fistula in Ano ..	2	..	..	..	1	..	6	..	..	..	..	..
Splenitis	..	..	..	..	..	..	3	..	..	..	..	..
Hepatitis Acuta ..	6	..	..	..	3	..	8	1	..	..	..	..
„ Chronica ..	3	..	..	..	4	..	13	..	1	..	..	..
Icterus	1	..	..	..	5	..	17	..	3	..	..	..
Ascites..	..	..	1	..	..	..	1	1	..	..	..	..
Glossitis	..	..	..	..	1	..	1	..	..	..	..	..
Stomatitis	1	..	..	..	..	..	..	..	..	..	..	..
Pharyngitis	2	..	..	..	..	..	..	..	..	..	..	..
5. Of the Urinary System:												
Nephritis	..	..	1	1	1	..	4	..	..	..	..	..
Nephria	..	..	1	..	..	..	5	..	1	..	..	..
Ischuria	1	..	..	..	1	..	2	..	..	..	..	..
Hæmaturia	..	..	..	..	..	..	3	..	..	..	..	..
Lithiasis	..	..	..	..	..	..	1	..	..	..	..	..
Cystitis	..	..	..	..	..	..	1	..	..	..	..	..
Fistula in Perineo ..	..	..	..	..	..	..	1	..	..	..	..	..
Enuresis	..	..	..	..	1	..	5	..	..	..	..	..
Urethritis	..	..	..	..	..	..	1	..	..	..	..	..

Appendix No. XII.—*continued.*

Stations	Bermuda.		Nova Scotia, &c. Troops *en route.*		Nova Scotia, &c. Permanent Force.		Canada.		Newfoundland		British Columbia.	
Average Annual Strength ..	1,275		477		3,478		10,763		273		129	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
6. Of the Reproductive System:												
Varicocele	..	..	..	..	..	..	1	..	..	..	..	..
Hydrocele	2	..	..	..	1	..	6	..	..	..	..	..
Orchitis (not Gonorrhœal)	24	..	2	..	8	..	70	..	2	..	..	..
7. Of the Locomotive System:												
Arthritis	..	..	..	..	1	..	12	..	1	..	..	..
Synovitis	2	..	..	..	1	..	7	..	..	..	..	..
Hydrarthrus	..	..	..	..	..	..	1	..	1	..	..	..
Contractura	1	..	..	..	..	..	2	..	..	..	..	..
Periostitis	..	..	..	..	..	..	12	..	..	..	..	..
Caries	..	..	..	..	..	..	2	..	..	..	..	..
Necrosis	..	..	..	..	..	..	1	..	..	..	..	..
8. Of the Integumentary System:												
Urticaria	..	..	..	..	1	..	7	..	1	..	..	..
Eczema	1	..	..	..	15	..	27	..	..	..	..	..
Herpes	3	..	..	..	5	..	10	..	..	..	..	..
Impetigo	2	..	..	..	2	..	6	..	2	..	..	..
Psoriasis	2	..	1	..	1	..	12	..	1	..	..	..
Lichen..	..	..	..	..	1	..	..	..	..	..	..	..
Rupia	..	..	..	..	2	..	2	..	..	..	....	..
Acne	..	..	..	..	..	..	3	..	..	..	..	..
Mentagra	..	..	..	..	..	..	1	..	..	..	..	..
Lepra	..	..	..	..	..	..	2	..	..	..	..	..
Prurigo	2	..	..	..	..	..	..	..	..	..	..	..
Pernio	..	..	1	..	..	..	..	..	..	..	..	..
Phlegmon	93	..	23	..	167	..	497	..	4	..	3	..
Abscessus	7	..	2	..	3	..	129	1	1	..	1	..
Paronychia	7	..	1	..	6	..	25	..	..	..	..	..
Ulcus	64	..	10	..	61	..	301	..	..	..	5	..
IV. *Developmental Diseases.*												
4. Diseases of Nutrition:												
Atrophia	3	..	..	..	3	..	4	..	..	..	..	..
V. *Violent Deaths or Diseases.*												
1. Accidental:												
Ambustio	3	..	7	..	20	..	55	..	4	..	..	..
Explosio	..	..	..	..	..	..	..	..	1	..	..	..
Gelatio	..	..	10	..	5	..	49	..	2	..	2	..
Insolatio	..	..	..	..	..	..	3	..	..	..	..	..
Submersio	..	3	..	..	..	2	..	16	..	..	..	..
Asphyxia	..	..	..	..	..	..	..	1	..	..	..	..
Fractura	3	1	6	..	16	..	59	2	..	..	1	..

Appendix No. XII.—*continued.*

Stations	Bermuda.		Nova Scotia, &c.				Canada.		New-foundland		British Columbia.	
			Troops *en route.*		Perma-nent Force.							
Average Annual Strength ..	1,275		477		3,478		10,763		273		129	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Amputatio	..	..	1	..	..	..	..	..	..	..	..	..
Contusio	73	..	19	..	79	..	426	..	12	..	20	..
Commotio	..	..	..	..	2	..	1	1	..	..	..	..
Vulnus Sclopetarium..	..	..	..	..	..	..	4	..	1	..	..	..
„ Incisum ..	27	..	11	..	41	..	307	..	6	..	5	..
Luxatura	2	..	..	..	3	..	10	..	..	..	..	..
Subluxatio	15	..	10	..	77	..	242	..	7	..	..	..
Vesiculæ Pedis ..	1	..	1	..	9	..	18	..	..	..	..	..
Morsus Canis	..	..	..	..	1	..	..	..	..	..	..	..
„ Serpentis ..	..	..	..	..	..	..	1	..	..	..	..	..
3. Homicidal :												
Vulnus Sclopetarium..	..	1	..	..	..	..	1	3	..	..	..	..
Commotio Cerebri ..	..	..	..	..	..	1	..	..	..	..	..	..
4. Suicidal :												
Vulnus Sclopetarium..	..	..	..	..	..	..	1	2	..	..	..	..
Suspendium	..	..	..	..	..	..	..	1	..	..	..	..
5. Executio : ..												
Suspendium	..	..	..	..	..	..	..	1	..	..	..	..
6. Punitus	1	..	1	..	6	..	8	..	..	..	..	..
Diseases not specified	..	..	..	..	..	..	9	..	..	..	..	..
No appreciable disease	..	..	..	..	1	..	..	..	..	..	..	..
Total ..	978	14	387	12	2038	27	7176	80	167	2	90	1

CAUSES of the Deaths of the Invalids.

Diseases.	Bermuda.	Nova Scotia, &c.	Canada.	Newfoundland.
Phthisis Pulmonalis ..	..	2	6	1
Morbus Valv: Cordis ..	1	..	..	..
Aneurisma Aortæ ..	..	1	..	..
Bronchitis Chronica ..	..	..	1	..
Nephritis	..	..	1	..
Nephria	..	..	1	..
Abscessus	..	..	1	..
Total	1	3	10	1

APPENDIX No. XIII.

Abstract, showing the Number of Men sent Home from British America in 1862, recommended to be Discharged as Invalids or for Change of Climate.

Diseases.	Bermuda.		Nova Scotia.		Canada.		Newfoundland.	
	For Discharge.	Change of Climate.	For Discharge.	Change of Climate.	For Discharge.	Change of Climate.	For Discharge.	Change of Climate.
Ophthalmia	1	1	..	..	1	4	..	..
Rheumatismus Acutus..	1	3	..	1	1	..	..	..
„ Chronicus	..	..	1	4	5	5	..	..
Syphilis Secundaria ..	..	..	..	..	2	12	..	..
Strictura Urethræ ..	..	1	..	1	1	1	..	..
Lumbago	..	..	..	..	..	1	..	..
Anæmia..	..	..	..	..	..	1	..	..
Anasarca	..	..	..	..	1	..	..	..
Scrofula..	..	..	..	1	..	1	..	..
Phthisis Pulmonalis ..	1	..	7	1	19	16	..	..
Hæmoptysis	..	..	1	..	..	..	..	..
Paralysis	..	..	..	..	3	1	..	..
Amentia	..	..	1	..	4	..	..	..
Epilepsia	..	..	1	..	8	..	..	..
Dysecœa	..	..	..	..	1	..	..	..
Otitis	..	..	..	..	1	..	..	..
Vertigo	..	..	..	..	..	1	..	..
Cæcitas	..	..	..	..	1	..	..	..
Pericarditis	..	..	..	..	2	..	..	..
Hypertrophia cordis ..	..	..	..	1	3	..	..	..
Morbus Valv: Cordis..	..	..	..	4	5	..	..	..
Aneurisma	..	1	..	..	..	..	..	..
Phlebitis	..	..	..	..	1	..	..	..
Bronchitis Acuta ..	..	..	..	..	..	1	..	..
„ Chronica ..	..	..	..	2	3	8	..	..
Pleuritis	..	..	..	..	..	3	..	..
Pneumonia	..	..	..	1	..	3	..	..
Dyspepsia	..	..	..	..	..	2	..	..
Hæmatemesis	..	..	..	..	..	1	..	..
Hernia	..	..	..	..	2	..	..	..
Hepatitis Chronica ..	..	..	1	1	..	3	..	..
Nephria..	..	..	..	..	2	..	..	..
Enuresis	..	..	..	..	..	3	..	..
Arthritis	..	..	..	1	2	2	..	..
Synovitis	..	..	1	..	..	..	..	..
Contractura	..	..	..	..	3	..	..	..
Caries	..	..	..	..	1	..	..	..
Deformitas	..	..	..	..	1	..	..	..
Phlegmon	..	1	..	1	..	..	..	..
Ulcus	..	..	..	2	2	1	..	..
Atrophia	..	..	1	..	2	..	..	..
Gelatio	..	..	1	..	3	..	..	..
Amputatio	..	..	..	..	2	..	..	..
Contusio	..	..	..	..	1	..	..	..
Vulnus Incisum ..	..	..	1	..	..	..	..	..
Total	3	7	16	21	83	70	..	..

APPENDIX No. XIV.

ABSTRACT, showing the Ages of the Troops serving in British America, and the Deaths at each Age during the year 1862.

Station.	Corps.	Under 20.		20–24.		25–29.		30–34.		35–39.		40 and upwards.		Total.	
		Strength, 1st April.	Died.	Strength, 1st April.	Died.	Strength, 1st April.	Died.	Strength, 1st April.	Died.	Strength, 1st April.	Died.	Strength, 1st April.	Died.	Strength, 1st April.	Died.
Bermuda	Royal Artillery ..	18	..	92	1	89	3	31	..	1	..	..	..	231	4
	Royal Engineers ..	10	..	84	2	85	..	21	..	5	..	..	..	205	2
	39th Foot	20	..	359	2	291	6	136	1	30	..	3	..	839	9
Canada and Nova Scotia	Royal Artillery ..	285	2	1,032	3	678	11	266	5	141	1	23	..	2,425	22
	Royal Engineers ..	8	..	63	..	33	1	11	..	4	..	1	..	120	1
	3rd Batt. Mil. Train	3	..	166	..	115	1	14	1	5	..	2	..	305	2
	1st „ Gren. Gds.	31	..	231	..	476	3	101	..	22	..	..	..	861	3
	2nd „ Scots Fusilier Guards	49	..	314	..	385	2	99	..	17	..	1	..	865	2
	1st Batt. 15th Foot.	76	..	429	4	187	..	188	1	49	3	7	..	936	8
	1st „ 16th „	106	..	400	4	196	2	82	1	33	..	12	..	829	7
	2nd „ 16th „	179	..	129	4	154	1	237	1	138	1	29	..	866	7
	1st „ 17th „	32	..	247	1	402	3	105	..	33	1	5	..	824	5
	2nd „ 17th „	311	..	413	6	104	..	27	..	13	..	1	..	869	6
	30th Foot	227	..	276	4	236	3	69	..	35	1	14	..	857	8
	47th „	115	..	375	1	189	5	132	..	29	..	..	..	840	6
	4th Batt. 60th Foot	90	..	690	2	42	1	18	..	4	..	1	..	845	3
	62nd Foot.. ..	112	..	312	2	297	4	74	1	21	..	3	..	819	7
	63rd „	98	..	337	3	243	2	85	2	31	1	4	..	798	8
	1st Batt. Rifle Brig.	163	1	304	3	271	7	76	2	20	..	..	..	834	13
	Rl. Canadian Rifles	24	..	7	..	40	1	253	2	377	1	316	6	1,017	10
New-found-land.	Royal Newfound-land Companies	4	..	26	..	50	2	35	..	32	..	19	..	166	2
	Total	1,961	3	6,286	42	4,563	58	2,060	17	1,040	9	441	6	16,351	135

APPENDIX No. XV.

Abstract, showing the Admissions into Hospital and Deaths among the White Troops serving in the Windward and Leeward Command and Jamaica, in the year 1862.

Stations	Jamaica.		Windward and Leeward Command.		Subordinate Stations.							
					Bar-badoes.		St. Lucia.		Trinidad.		British Guiana.	
Strength	702		1,222		775		88		194		144	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
I. *Zymotic Diseases.*												
1. Miasmatic:												
Morbilli	1	..	1	..	..	..	..	..	1	..	..	..
Tonsillitis	7	..	5	1	4	1	1	..	..	..	..	..
Influenza	..	..	9	..	..	..	4	..	4	..	1	..
Ophthalmia	51	..	157	..	136	..	4	..	13	..	3	..
Erysipelas	..	..	1	..	1	..	..	..	..	..	..	..
Furunculus	3	..	11	..	..	..	3	..	8	..	..	..
Dysenteria Acuta ..	..	..	7	..	6	..	..	..	1	..	..	..
„ Chronica.	..	..	1	..	..	..	..	..	..	..	1	..
Diarrhœa	25	..	51	..	21	..	6	..	19	..	5	..
Febris Intermittens .	12	..	242	..	28	..	6	..	49	..	159	..
„ Remittens ..	4	2	192	1	150	..	16	..	19	1	7	..
„ Icterodes ..	..	..	27	5	27	5	..	..	..	..	..	..
„ Typhus ..	..	1	..	..	..	..	..	..	..	..	..	..
„ Continua ..	43	1	10	..	..	..	5	..	..	..	5	..
Rheum: Acutus ..	15	..	16	..	14	..	1	..	..	..	..	..
„ Chronicus ..	1	..	11	..	3	..	..	..	4	..	3	..
Parotitis	..	..	1	..	1	..	..	..	..	..	..	..
2. Enthetic:												
Syphilis Primaria ..	4	..	30	..	25	..	1	..	1	..	1	..
„ Secundaria.	1	..	8	..	5	..	..	..	2	..	1	..
Iritis Syphilitica ..	1	..	..	..	..	..	..	..	..	..	..	..
Bubo	9	..	26	..	22	..	2	..	1	..	1	..
Gonorrhœa	14	..	53	..	47	..	5	..	..	..	..	..
Phymosis, &c. ..	3	..	1	..	..	..	1	..	..	..	..	..
Orchitis (Gonorr.) ..	..	..	2	..	1	..	1	..	..	..	..	..
Strictura Urethræ ..	1	..	1	..	1	..	..	..	..	..	..	..
3. Dietic:												
Ebriositas	10	1	50	..	32	..	2	..	14	..	1	..
4. Parasitic:												
Porrigo	..	..	2	..	1	..	..	..	..	..	1	..
Scabies	2	..	..	..	..	..	..	..	..	..	..	..
Tænia Solium	1	..	..	..	..	..	..	..	..	..	..	..
Vermes	..	..	1	..	1	..	..	..	..	..	..	..
Aphthæ	..	..	3	..	3	..	..	..	..	..	..	..
II. *Constitutional Diseases.*												
1. Diathetic:												
Anæmia	..	..	13	..	8	..	..	..	4	..	1	..

Appendix No. XV.—*continued.*

Stations	Jamaica.		Windward and Leeward Command.		Subordinate Stations.							
					Barbadoes.		St. Lucia.		Trinidad.		British Guiana.	
Strength	702		1,222		775		88		194		144	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
2. Tubercular:												
Phthisis Pulmonalis.	4	1	4	1	4	1	..	..	..	..	..	..
Hæmoptysis ..	3	..	..	..	..	..	..	..	..	..	..	..
III. *Local Diseases.*												
1. Nervous:												
Apoplexia	..	..	2	2	..	2	..	..	2	..	..	..
Paralysis	1	..	1	..	..	..	..	..	1	..	..	..
Delirium Tremens ..	4	1	5	2	4	2	..	..	1	..	..	..
Mania	..	..	3	..	..	..	..	..	2	..	..	..
Amentia	1	..	3	..	2	..	..	..	2	..	..	..
Epilepsia	..	..	1	..	1	..	..	..	..	..	..	..
Cephalæa	1	..	3	..	1	..	..	..	2	..	..	..
Neuralgia	..	..	1	..	1	..	..	..	1	..	..	..
Dysecœa	..	..	..	..	..	..	..	..	2	..	..	..
Otitis	..	..	16	..	10	..	1	..	..	..	2	..
2. Circulatory:												
Carditis	..	..	1	..	1	..	..	..	..	..	..	..
Pericarditis	..	..	2	..	2	..	..	..	..	..	..	..
Hypertrophia cordis	2	..	1	..	..	..	..	..	..	..	1	..
Morbus Valv: cordis	..	..	4	1	4	1	..	..	..	..	..	..
Aneurisma	..	1	1	1	1	1	..	..	..	..	..	..
Angina Pectoris ..	..	..	2	..	1	..	..	..	1	..	..	..
3. Respiratory:												
Bronchitis Acuta ..	32	..	13	..	13	..	..	..	1	..	1	..
„ Chronica	5	..	8	..	5	..	..	..	..	..	3	..
Pleuritis	..	..	5	..	4	..	..	..	1	..	..	..
Pneumonia	1	..	7	..	5	..	..	..	1	..	1	..
Epistaxis	2	..	1	..	..	..	..	..	1	..	..	..
4. Digestive:												
Stomatitis	2	..	..	..	..	..	..	..	..	..	..	..
Gastritis	1	..	1	..	1	..	..	..	..	..	..	..
Enteritis	..	..	2	..	..	..	2	..	..	..	..	..
Peritonitis	..	..	1	..	1	..	..	..	..	..	..	..
Obstipatio	1	..	3	..	1	..	..	..	2	..	..	..
Dyspepsia	10	..	30	..	15	..	1	..	7	..	7	..
Colica	2	..	18	..	5	..	6	..	7	..	..	..
Hæmorrhois ..	..	..	9	..	5	..	..	..	3	..	1	..
Hepatitis Acuta ..	1	..	1	..	..	..	1	..	..	..	..	..
„ Chronica .	..	..	2	..	1	..	..	..	1	..	..	..
Icterus	1	..	3	..	2	..	..	..	..	..	..	..
5. Urinary:												
Nephria	..	..	1	..	1	..	..	..	..	..	..	..
Hæmaturia	1	..	..	..	..	..	..	..	..	..	..	..
6. Reproductive:												
Hydrocele	..	..	7	..	7	..	..	..	..	..	..	..
Orchitis (not Gon.) .	1	..	29	..	16	..	..	..	9	..	4	..

Appendix No. XV.—*continued.*

					Subordinate Stations.							
Stations	Jamaica.		Windward and Leeward Command.		Barbadoes.		St. Lucia.		Trinidad.		British Guiana.	
Strength	702		1,222		775		88		194		144	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
7. Locomotive:												
Arthritis	..	..	1	..	1	..	..	..	..	..	..	..
Synovitis	..	..	5	..	3	..	..	..	2	..	..	..
Periostitis	..	..	1	..	1	..	..	..	..	..	..	..
8. Integumentary:												
Eczema	5	..	19	..	12	..	..	..	2	..	5	..
Psoriasis	3	..	..	..	..	..	..	..	..	..	..	..
Pityriasis	..	..	1	..	1	..	..	..	..	..	..	..
Rupia	1	..	..	..	..	..	..	..	..	..	..	..
Phlegmon	31	..	89	..	75	..	..	..	..	..	13	..
Abscessus	2	..	20	..	5	..	3	..	11	..	..	..
Paronychia	1	..	5	..	4	..	..	..	..	..	..	..
Ulcus	33	..	51	..	35	..	5	..	8	..	3	..
IV. *Developmental Diseases.*												
4. Diseases of Nutrition:												
Atrophia	1	..	..	..	..	..	..	..	..	..	..	..
V. *Violent Deaths or Diseases.*												
1. Accidental:												
Ambustio	3	..	3	..	1	..	1	..	..	..	1	..
Explosio	3	..	..	..	..	..	..	..	..	..	..	..
Submersio	..	..	..	1	..	..	..	1	..	..	..	..
Fractura	1	..	13	..	11	..	..	..	..	..	2	..
Ictus Fulminis ..	..	..	1	..	1	..	..	..	..	..	..	..
Contusio	49	..	57	..	45	..	3	..	6	..	2	..
Vulnus Incisum ..	16	..	20	..	4	..	2	..	9	..	5	..
Luxatura	1	..	1	..	1	..	..	..	..	..	..	..
Subluxatio	13	..	18	..	11	..	3	..	3	..	..	..
Vesiculæ Pedis ..	3	..	..	..	..	..	..	..	1	..	..	..
6. Punitus	2	..	6	..	6	..	..	..	..	..	..	..
Total	452	8	1434	15	868	13	86	1	229	1	241	..

CAUSES of the Deaths of the Invalids.

	Jamaica.	Windward and Leeward Command.
Dysenteria Chronica	..	1
Phthisis Pulmonalis	1	..

APPENDIX No. XVI.

Abstract, showing the Number of Men sent Home from the West Indies in 1862, recommended to be Discharged as Invalids, or for change of Climate.

	Windward and Leeward Command.		Jamaica.	
	For Discharge.	For Change of Climate.	For Discharge.	For Change of Climate.
Ophthalmia	..	16	..	..
Febris Intermittens	..	..	..	1
Rheumatismus	..	4	..	..
Iritis Syphilitica	..	..	1	..
Anæmia	..	1	..	..
Phthisis Pulmonalis	2	..	1	..
Monomania	2	..	..	..
Apoplexia	1	..	..	..
Paralysis	..	..	1	..
Epilepsia	1	..	..	..
Carditis	..	1	..	..
Morbus Valv: Cordis	3	..	..	..
Bronchitis	..	1	..	..
Hepatitis	..	1	..	..
Hæmatemesis	1	..	..	..
Fistula in Perineo	1	..	..	..
Abscessus	..	1	..	1
Total	11	25	3	2

APPENDIX No. XVII.

ABSTRACT, showing the Admissions into Hospital and Deaths among the Black Troops serving in the Windward and Leeward Command, Jamaica, Honduras, and Bahamas, in the year 1862.

Stations	Jamaica.		Windward and Leeward Command.		Subordinate Stations.								Honduras.		Bahamas.	
					Barbadoes.		St. Lucia.		Trinidad.		British Guiana.					
Average Strength.	826		1,164		659		87		113		300		305		439	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
I. *Zymotic Diseases.*																
1. Miasmatic :																
Variola	..	..	8	..	7	..	..	..	..	..	1	..	..	..	1	..
Varicella	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Morbilli	18	..	3	..	1	..	..	..	..	..	2	..	..	..	..	..
Tonsillitis	15	..	40	..	31	..	1	..	1	..	3	..	5	..	2	..
Influenza	9	..	21	..	16	..	2	..	3	..	..	..	..	..	..	..
Ophthalmia.. ..	15	..	33	..	17	..	2	..	4	..	10	..	3	..	10	..
Erysipelas	..	..	1	..	1	..	..	..	..	..	..	..	1	..	..	..
Furunculus.. ..	..	..	5	..	3	..	..	..	1	..	..	..	3	..	1	..
Pyæmia	..	..	1	1	1	1	..	..	..	..	..	..	..	..	..	..
Dysenteria Acuta .	3	..	3	..	..	..	..	..	3	..	..	..	..	..	1	..
„ Chron :	1	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..
Diarrhœa	11	..	16	1	12	..	1	1	2	..	1	..	3	..	4	1
Cholera	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Febris Intermittens	82	1	20	..	3	..	3	..	3	..	14	..	126	..	118	..
„ Remittens .	61	..	99	1	90	1	3	..	2	..	5	..	..	..	22	1
„ Continua ..	9	..	3	..	..	..	2	..	..	..	1	..	..	..	3	..
Rheumat : Acutus.	18	..	59	1	4	..	1	..	1	..	2	1	3	..	25	..
„ Chron :	48	..	20	..	49	..	6	..	8	..	12	..	16	..	7	..
Parotitis	...	..	23	..	23	..	..	..	..	..	..	..	1	..	..	..
2. Enthetic :																
Syphilis Primaria.	97	..	75	..	49	..	2	..	9	..	16	..	2	..	21	..
„ Secundaria	10	..	12	..	7	..	..	..	2	..	3	..	..	..	5	..
Iritis Syphilitica	2	..	2	..	..	..	..	..	..	..	2	..	..	..	1	..
Bubo	25	..	22	..	15	..	..	..	1	..	6	..	2	..	16	1
Gonorrhœa	105	..	82	..	61	..	1	..	2	..	18	..	20	..	50	..
Phymosis, &c. ..	1	..	6	..	6	..	..	..	..	..	..	..	1	..	1	..
Orchitis (Gon.) ..	5	..	1	..	1	..	..	..	..	..	..	..	2	..	..	..
Strictura Urethræ	2	1	2	..	1	..	..	..	1	..	..	..	2	..	1	..
3. Dietic :																
Ebriositas	..	..	1	..	1	..	..	..	..	..	..	..	1	..	..	..
4. Parasitic :																
Scabies	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dracunculus ..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..
II. *Constitutional Diseases.*																
1. Diathetic :																
Podagra	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..
Lumbago	2	..	..	..	..	..	..	..	..	..	..	..	2	..	2	..
Anæmia	..	..	2	..	..	..	..	..	1	..	..	..	..	..	..	..
Anasarca	4	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..
2. Tubercular :																
Scrofula	5	1	4	..	2	..	..	..	1	..	1	..	..	..	6	..

Appendix No. XVII.—*continued.*

Stations	Jamaica.		Windward and Leeward Command.		Subordinate Stations.								Hon-duras.		Bahamas	
					Bar-badoes.		St. Lucia.		Trinidad.		British Guiana.					
Average Strength.	826		1,164		659		87		113		300		305		439	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Phthisis Pulmon:	4	4	7	5	2	3	2	..	1	..	2	2	..	1	2	4
Hæmoptysis ..	3	1	3	1	3	1	..	..	..	..	..	..	..	..	..	..
Abscessus Psoanus	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Tubercul: Mesent:	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
III. *Local Diseases.*																
1. Nervous:																
Apoplexia	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Paralysis	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Delirium Tremens	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..
Mania	1	..	4	1	3	1	..	..	..	..	1	..	2	..	..	..
Amentia	4	..	3	..	..	..	..	..	1	..	2	..	2	..	..	..
Epilepsia	3	1	3	..	3	..	..	..	..	..	..	..	3	..	..	..
Tetanus	..	..	1	1	..	..	..	..	..	..	1	1	..	..	..	..
Cephalæa	4	..	1	..	1	..	..	..	..	..	..	..	1	..	2	..
Neuralgia	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Otitis	3	..	1	..	1	..	..	..	..	..	..	..	..	..	2	..
Cæcitas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
2. Circulatory:																
Carditis	..	..	1	1	1	1	..	..	..	..	..	..	..	..	..	..
Pericarditis.. ..	..	..	2	..	1	..	..	..	1	..	..	..	..	..	..	..
Morb: Valv: Cord:	2	2	2	..	2	..	..	..	..	..	..	..	..	..	..	..
Aneurisma Aortæ	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..
Aneurisma	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
3. Respiratory:																
Bronchitis Acuta	25	..	10	..	3	..	4	..	5	..	3	..	7	..	9	..
" Chron:	16	3	32	3	24	2	1	..	..	..	3	1	4	..	..	..
Pleuritis	12	1	11	..	10	..	1	..	..	..	..	..	1	..	11	1
Pneumonia.. ..	12	3	5	1	2	1	2	..	..	..	1	..	..	..	3	3
Asthma	4	..	7	..	3	..	2	..	..	..	2	..	8	..	..	..
4. Digestive:																
Stomatitis	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Enteritis	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..
Obstipatio	2	..	6	..	6	..	..	..	..	..	5	..	..	..	..	..
Dyspepsia	7	..	22	..	12	..	3	..	2	..	..	..	3	..	1	..
Colica	2	..	9	..	5	..	1	..	3	..	..	..	4	..	2	..
Hernia..	9	..	2	..	2	..	..	..	..	..	..	..	5	..	..	..
Hæmorrhois ..	1	..	2	..	2	..	..	..	..	..	..	..	4	..	1	..
Hepatitis Acuta ..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
" Chronica	1	1	3	..	2	..	1	..	..	..	..	..	..	..	..	..
Icterus..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Ascites..	5	1	5	..	..	..	..	..	..	..	..	..	..	..	1	1
Melæna	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
5. Urinary:																
Nephritis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Nephria	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cystitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
6. Reproductive:																
Hydrocele	1	..	2	..	1	..	..	..	..	..	1	..	..	..	3	..
Orchitis (not Gon.)	9	..	28	..	20	..	..	..	3	..	5	..	11	..	8	..

Appendix No. XVII.—*continued.*

Stations	Jamaica.		Windward and Leeward Command.		Subordinate Stations.								Honduras.		Bahamas	
					Barbadoes.		St. Lucia.		Trinidad.		British Guiana.					
Average Strength.	826		1,164		659		87		113		300		305		439	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
7. Locomotive:																
Arthritis	..	..	2	..	..	..	..	..	2	..	..	..	..	..	..	..
Synovitis	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Periostitis	..	..	3	..	..	..	..	..	..	..	2	..	..	..	..	..
Caries	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Necrosis	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..
8. Integumentary:																
Eczema	6	..	15	..	10	..	1	..	..	..	4	..	10	..	5	..
Herpes..	1	..	2	..	1	..	..	..	..	..	1	..	3	..	1	..
Impetigo	..	..	1		..	..	..	..	..	..	1	..	..	..	..	..
Psoriasis	..	..	3	..	2	..	..	..	2	..	..	..	2	..	..	..
Ecthyma	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Acne	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..
Phlegmon	23	..	19	..	13	..	..	..	2	..	4	..	21	..	8	..
Abscessus	19	..	23	..	19	..	..	..	4	..	..	..	6	..	3	1
Paronychia	3	..	..	..		..	..	..	..	..	..	..	1	..	1	..
Ulcus	44	..	58	..	31	..	2	..	3	..	22	..	37	..	18	..
IV. *Developmental Diseases.*																
4. Diseases of Nutrition:																
Atrophia	1	..	4	2	3	1	1	1	..	..	..	..	2	..	..	..
V. *Violent Deaths or Diseases.*																
1. Accidental:																
Insolatio	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..
Submersio	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..
Fractura	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..
Tetanus Traumat:	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Amputatio	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Contusio	9	..	18	..	12	..	2	..	1	..	3	..	15	..	11	..
Vulnus Sclop. ..	..	..	4	..	2	..	..	..	1	..	1	..	..	..	..	..
„ Incisum ..	20	..	30	..	19	..	..	..	2	..	8	..	16	..	5	..
Luxatura	..	..	3	..	1	..	2	..	..	..	..	..	..	..	..	..
Subluxatio	16	..	3	..	2	..	..	..	..	..	1	..	4	..	1	..
Vesiculæ Pedis ..	12	..	2	..	2	..	..	..	..	..	..	..	3	..	..	..
Venenatio	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..
3. Homicidal:																
Vulnus Incisum ..	..	..	..	1	..	1	..	..	1	..	..	..	..	1	..	..
4. Suicidal.																
Vulnus Sclop: ..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Vulnus Incisum ..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
5. Executio:																
Suspendium ..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..
6. Punitus ..	1	..	2	..	2	..	..	..	..	..	..	..	..	..	1	..
Diseases not specified	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..
Total	852	25	937	22	634	14	50	3	80	..	173	5	378	5	404	13

APPENDIX No. XVIII.

ABSTRACT, showing the Ages of the Troops serving in the West Indies and Western Africa and the Deaths at each Age during the Year 1862.

Age	Under 20 Years.		20-24.		25-29.		30-34.		35-39.		40 and upwards		Total.	
	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.
WHITE TROOPS:														
Royal Artillery ..	3	..	113	1	62	3	23	1	4	1	..	..	208	6
1st Batt. 14th Regt.	46	..	312	2	362	2	110	1	29	..	2	..	861	5
,, ,, 21st ,,	91	..	396	2	253	2	93	..	37	2	6	..	876	6
Total	140	..	821	5	677	7	229	2	70	3	8	..	1,945	17
BLACK TROOPS:														
Artillery	..	..	3	..	13	..	7	1	11	1	3	..	37	2
1st West India Regt.	194	3	344	6	112	4	128	3	54	1	9	..	841	17
2nd ,, ,, ,,	59	1	127	7	114	3	81	2	43	..	1	..	425	13
3rd ,, ,, ,,	177	4	369	8	201	2	119	..	150	4	8	1	1,024	19
Military Labourers..	21	..	74	2	62	2	22	..	27	..	11	..	217	4
Total	451	8	917	23	502	11	357	6	285	6	32	1	2,544	55

APPENDIX No. XIX.

Abstract, showing the Admissions into Hospital and Deaths among the Black Troops serving in Western Africa, in the year 1862.

Stations	Sierra Leone.		Gambia.		Lagos.		Gold Coast.	
Strength	317		209		105		313	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
I. *Zymotic Diseases.*								
1. Miasmatic:								
Varicella	1	..	..	..	..	..	..	..
Tonsillitis	..	..	1	..	..	..	..	..
Ophthalmia	2	..	3	..	..	..	1	..
Anthrax	..	..	..	..	..	..	1	..
Dysenteria Acuta	4	..	11	..	15	2	..	..
„ Chronica	2	..	..	..	..	..	..	..
Diarrhœa	4	..	28	..	13	1	5	..
Febris Intermittens	5	..	32	..	31	..	..	..
„ Remittens	18	..	28	1	15	..	1	1
Rheumatismus Acutus	4	..	11	..	7	..	2	..
„ Chronicus	14	..	2	..	7	..	2	..
2. Enthetic:								
Syphilis Primaria	14	..	4	..	27	..	2	..
Iritis Syphilitica	..	..	..	..	1	..	..	..
Bubo	4	..	..	..	10	..	2	..
Gonorrhœa	18	..	26	..	19	..	6	..
Phymosis, &c.	1	..	..	..	..	..	1	..
Orchitis (Gonorrhœal)	1	..	1	..	1	..	..	..
Strictura Urethræ	2	..	..	..	3	..	..	..
Verrucæ	1	..	..	..	..	..	..	..
Ulcus Penis	..	..	2	..	..	..	..	..
3. Dietic:								
Ebriositas	1	1	..	..	..	..	..	..
4. Parasitic:								
Scabies	12	..	..	..	1	..	..	..
Tænia Solium	..	..	4	..	..	..	..	..
Ascaris Lumbricoides	1	..	..	..	..	..	..	..
Dracunculus	..	..	..	..	4	..	35	..
II. *Constitutional Diseases.*								
1. Diathetic:								
Lumbago	..	..	3	..	..	..	..	..
Anasarca	1	..	..	..	..	..	..	..
2. Tubercular:								
hthisis Pulmonalis	9	4	..	2	..	..	1	1
Hæmoptysis	1	..	1	1	..	..	..	..
Morbus Coxarius	..	..	1	..	..	..	..	..
Abscessus Psoanus	..	..	..	..	..	..	1	1
III. *Local Diseases.*								
1. Nervous:								
Delirium Tremens	1	..	1	..	..	..	1	..
Amentia	..	..	2	..	..	..	..	..
Cephalæa	..	..	1	..	..	..	..	..
Neuralgia	..	..	..	..	1	..	..	..
Otitis	..	..	1	..	..	..	2	..
Lethargus	1	1	..	..	..	..	..	..
Cataractes	..	..	1	..	..	..	..	..
2. Circulatory:								
Atrophia Cordis	..	..	..	..	..	..	..	1
3. Respiratory:								
Laryngitis	1	..	..	..	2	..	..	..
Bronchitis Acuta	5	..	7	..	..	..	2	1

Appendix No. XIX.—*continued.*

Stations	Sierra Leone.		Gambia.		Lagos.		Gold Coast.	
Strength	317		209		105		313	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Bronchitis Chronica.. ..	7	..	1	..	..	..	..	..
Pleuritis	2	..	6	..	..	..	5	1
Pneumonia	4	3	2	..	..	..	1	1
Apoplexia Pulmonalis ..	..	..	1	..	..	..	..	..
Singultus	1	..	..	..	..	..	..	..
Pleurodynia	..	..	..	..	..	..	1	..
4. Digestive:								
Pharyngitis	1	..	..	..	..	..	..	..
Obstipatio	2	..	3	..	..	..	..	..
Dyspepsia	..	..	1	..	..	..	..	..
Colica	..	..	3	..	..	..	..	..
Hernia	..	..	4	..	..	..	..	..
Hepatitis Acuta	2	..	..	..	..	..	..	..
,, Chronica	1	..	..	..	..	..	..	..
Icterus	1	.	..	..	..	..	..	..
Ascites	..	..	..	..	1	..	..	..
5. Urinary:								
Nephritis	..	..	2	..	..	..	..	..
Hæmaturia	..	..	1	..	..	..	..	..
6. Reproductive:								
Hydrocele	..	..	..	..	1	..	3	..
Orchitis (not Gonorrhœal) ..	7	..	2	..	3	..	1	..
7. Locomotive:								
Arthritis	3	..	1	..	..	..	4	..
8. Integumentary:								
Herpes	..	..	..	..	1	..	..	..
Lepra	..	..	..	..	..	..	1	..
Frambœsia	..	..	..	..	..	..	4	..
Elephantiasis	..	..	..	..	..	..	1	..
Phlegmon	11	..	11	..	3	..	7	..
Abscessus	..	..	7	..	..	..	6	..
Paronychia	1	..	1	..	..	..	1	..
Ulcus..	49	..	15	..	18	..	20	..
V. *Violent Deaths or Diseases.*								
1. Accidental:								
Ambustio	..	..	1	..	1	..	..	..
Explosio	..	..	..	..	1	..	..	..
Insolatio	..	..	1	..	..	..	..	..
Fractura	3	..	1	..	..	..	..	..
Amputatio	1	..	..	..	..	..	..	..
Contusio	3	..	8	..	5	..	11	..
Vulnus Sclopetarium ..	..	..	1	..	..	..	..	..
,, Incisum	9	..	9	..	2	..	8	..
Luxatura	..	..	1	..	..	..	..	..
Vesiculæ Pedis	7	..	..	..	..	..	..	..
2. In Battle:								
Vulnus Sclopetarium ..	7	..	..	..	..	..	..	..
5. Executio:								
Vulnus Sclopetarium ..	..	..	..	.	..	..	..	2
6. Punitus	2	..	..	..	5	..	5	..
Total	252	9	254	4	198	3	144	9

APPENDIX No. XX.

Abstract, showing the Admissions into Hospital and Deaths among the Troops serving at St. Helena, the Cape of Good Hope, Mauritius, and Ceylon, in the year 1862.

Stations	St. Helena.		Cape of Good Hope.		Mauritius		Ceylon.			
							White.		Black.	
Strength	697		4,519		2,049		874		1,468	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
I. *Zymotic Diseases.*										
1. Miasmatic:										
Varicella	..	..	..	..	..	..	..	..	8	..
Morbilli	..	..	1	..	..	..	..	..	2	..
Scarlatina	..	..	1	..	..	..	..	..	..	..
Miliaria	..	..	..	..	..	..	..	..	1	..
Tonsillitis	5	..	97	..	16	..	6	..	1	..
Influenza	..	..	19	..	1	..	1	..	..	..
Ophthalmia	21	..	550	..	39	..	141	..	116	..
Erysipelas	2	..	5	..	1	..	..	..	..	..
Furunculus	25	..	25	..	12	..	3	..	32	..
Anthrax	..	..	..	..	1	..	..	..	..	..
Dysenteria Acuta	..	..	30	1	73	3	33	2	19	2
,, Chronica	..	..	5	..	19	3	7	..	1	..
Diarrhœa	51	..	160	3	135	..	41	1	57	2
Cholera Biliosa	..	..	..	..	1	..	1	..	..	..
,, Spasmodica	..	..	..	..	169	64	1	..	12	10
Febris Intermittens	..	..	9	..	39	1	80	..	505	1
,, Remittens	47	..	14	..	6	2	3	..	19	..
,, Typhoides	..	..	1	1	..	..	..	..	1	1
,, Typhus	..	..	1	..	4	..	..	..	..	..
,, Continua	33	1	209	4	94	1	12	..	16	..
Rheumatismus Acutus	4	..	105	..	16	..	33	..	72	..
,, Chronicus	10	..	73	..	26	..	24	..	11	..
Parotitis	..	..	3	..	2	..	..	..	1	..
Pertussis	..	..	2	..	..	..	..	..	..	
2. Enthetic:										..
Syphilis Primaria	20	..	421	..	123	..	93	..	8	..
,, Secundaria	13	..	113	..	13	..	20	..	6	..
Iritis Syphilitica	..	..	7	..	..	..	..	..	..	..
Bubo	9	..	136	..	31	..	29	..	14	..
Gonorrhœa	28	..	293	..	64	..	56	..	15	..
Phymosis, &c.	1	..	5	..	1	..	2	..	1	..
Orchitis (Gonorrhœal)	3	..	36	..	4	..	6	..	6	..
Strictura Urethræ	6	..	5	..	4	..	..	..	1	..
3. Dietic:										
Scorbutus	..	..	3	..	4	..	1	..	..	..
Ebriositas	37	..	70	3	36	..	26	1	1	..
4. Parasitic:										
Porrigo	..	..	3	..	..	..	..	..	..	..
Scabies	1	..	18	..	2	..	..	..	144	..
Tænia Solium	..	..	3	..	5	..	..	..	..	..
Vermes	1	..	3	..	..	..	..	..	..	..
Ascaris Lumbricoides	..	..	1	..	3	..	1	..	..	..
Phthiriasis	..	..	1	..	..	..	..	..	..	..

Appendix No. XX.—*continued.*

Stations	St. Helena.		Cape of Good Hope.		Mauritius		Ceylon.			
							White.		Black.	
Strength	697		4,519		2,049		874		1,468	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
II. *Constitutional Diseases.*										
1. Diathetic:										
Lumbago	3	..	3	..	1	..	..	..	..	..
Anæmia	..	..	2	..	..	..	..	..	1	..
Anasarca	3	..	1	..	..	..	1	1	1	..
Tumores	1	..	..	..	3	..	..	..	1	..
Gangræna	..	..	1	1	..	..	..	..	..	..
2. Tubercular:										
Scrofula	..	..	9	..	6	..	2	..	..	..
Phthisis Pulmonalis	..	1	10	..	13	4	21	3	4	1
Hæmoptysis	..	1	2	..	1	..	2	1	1	..
III. *Local Diseases.*										
1. Nervous:										
Myelitis	..	..	1	..	..	..	..	..	..	..
Meningitis	..	..	1	..	1	1	..	..	..	..
Apoplexia	..	1	1	1	1	1	..	1	1	1
Paralysis	2	..	5	1	1	..	1	..	1	..
Delirium Tremens	5	..	23	1	9	1	2	..	1	..
Mania	3	..	..	..	2	..	1	..	..	..
Amentia	1	..	10	..	7	..	6	..	5	..
Epilepsia	..	..	12	..	1	..	3	..	3	..
Convulsio	1	..	..	..	..	..	2	..	..	..
Cephalæa	..	..	13	..	5	..	15	..	..	..
Neuralgia	1	..	5	..	4	..	2	..	2	..
Dysecœa	..	..	..	..	..	..	..	..	1	..
Otitis	4	..	17	..	13	..	10	..	5	..
Odontalgia	2	..	..	..	..	..	..	..	..	..
Cæcitas	..	..	2	..	1	..	..	..	..	..
2. Circulatory:										
Carditis	..	..	2	..	..	..	3	..	..	..
Pericarditis	..	..	4	..	4	..	1	..	..	..
Hypertrophia cordis	..	..	1	1	3	..	6	..	..	1
Morbus Valv: Cordis	3	..	24	3	2	..	5	..	..	..
Atrophia cordis	..	..	..	..	..	..	1	..	..	..
Palpitatio cordis	..	..	2	..	2	..	..	..	..	..
Syncopo	..	..	..	..	..	..	1	..	..	..
Angina pectoris	..	..	1	..	..	..	..	..	2	1
Morbus cordis	..	..	12	1	..	..	..	..	..	..
Aneurisma Aortæ.	..	..	4	3	..	..	1	1	..	..
Aneurisma	..	..	1	2	..	..	..	..	..	..
Varix	1	..	13	..	1	..	..	..	1	..
3. Respiratory:										
Laryngitis	..	..	1	..	1	..	..	..	..	..
Bronchitis Acuta	30	1	88	1	27	..	42	..	60	1
,, Chronica	1	..	25	1	14	..	18	..	4	..
Pleuritis	2	..	15	1	5	..	1	..	..	..
Pneumonia	..	..	16	1	1	..	..	..	2	..
Asthma	1	..	2	..	..	..	..	..	16	..
Epistaxis	..	..	4	..	..	..	..	..	..	..
4. Digestive:										
Pharyngitis	..	..	1	..	..	..	..	..	..	
Stomatitis	..	..	2	..	..	..	..	..	..	..

Appendix No. XX.—*continued.*

Stations	St. Helena.		Cape of Good Hope.		Mauritius		Ceylon.			
							White.		Black.	
Strength	697		4,519		2,049		874		1,468	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Glossitis	..	..	1	..	..	..	..	..	..	..
Gastritis	..	..	4	1	..	..	2	..	..	..
Enteritis	..	..	1	..	1	..	..	..	..	..
Peritonitis	..	..	..	..	1	..	..	..	..	..
Obstipatio	7	..	6	..	24	..	1	..	3	..
Dyspepsia	12	..	100	..	35	..	17	..	3	..
Colica	11	..	33	..	24	..	4	..	32	..
Melæna	..	..	..	..	1	..	..	..	..	..
Hernia	..	..	5	..	4	..	2	..	3	..
Hæmorrhois	5	..	42	..	9	..	6	..	..	..
Fistula in ano	..	..	1	..	..	..	..	..	1	..
Hepatitis Acuta	2	..	8	..	13	1	25	..	2	..
,, Chronica	1	..	10	1	11	2	44	2	2	..
Congestio Hepatis	..	..	..	..	72	..	..	..	..	..
Icterus	..	..	11	..	2	..	..	..	2	..
5. Urinary:										
Nephritis	..	..	2	1	..	..	..	..	..	..
Ischuria	..	..	2	..	..	..	1	..	1	..
Hæmaturia	..	..	..	..	1	..	..	..	..	..
Lithiasis	..	..	..	..	1	..	1	..	..	..
Fistula in Perineo	..	..	2	..	2	..	..	..	..	..
Enuresis	4	..	4	..	1	..	1	..	..	..
6. Reproductive:										
Varicocele	..	..	..	..	1	..	3	..	..	..
Hydrocele	..	..	8	..	5	..	..	..	1	..
Orchitis (not Gonorrhœal)	..	..	46	..	31	..	22	..	7	..
7. Locomotive:										
Arthritis	1	..	8	..	2	..	..	..	..	..
Synovitis	..	..	3	..	5	..	..	..	1	..
Contractura	..	..	1	..	2	..	2	..	..	..
Periostitis	..	..	2	..	1	..	..	..	..	..
Exostosis	1	..	1	..	..	..	..	..	..	..
Caries	..	..	2	..	2	..	1	..	1	..
Necrosis	..	..	2	..	1	..	..	..	..	..
Atrophia musculorum	..	..	1	..	..	..	..	..	..	..
8. Integumentary System:										
Urticaria	..	..	2	..	..	..	..	..	1	..
Eczema	4	..	4	..	4	..	4	..	..	..
Herpes	1	..	3	..	3	..	..	..	1	..
Impetigo	..	..	6	..	1	..	..	..	..	..
Psoriasis	1	..	2	..	2	..	..	..	2	..
Lichen	..	..	1	..	..	..	..	..	..	..
Rupia	..	..	1	..	..	..	..	..	..	..
Roseola	..	..	1	..	..	..	..	..	..	..
Ecthyma	..	..	2	..	2	..	..	..	..	..
Acne	..	..	1	..	..	..	..	..	..	..
Mentagra	..	..	1	..	..	..	..	..	..	..
Pityriasis	..	..	..	..	1	..	..	..	..	..
Pemphigus	..	..	..	..	..	..	1	..	..	..
Prurigo	..	..	..	..	..	..	1	..	..	..
Phlegmon	1	..	140	..	66	..	46	..	46	..
Abscessus	15	..	74	..	38	..	9	..	17	..

Appendix No. XX.—*continued.*

Stations	St. Helena.		Cape of Good Hope.		Mauritius		Ceylon.			
							White.		Black.	
Strength	697		4,519		2,049		874		1,468	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Paronychia	3	..	21	..	12	..	3	..	5	..
Ulcus	7	..	188	..	70	..	36	..	81	..
IV. *Developmental Diseases.*										
4. Diseases of Nutrition :										
Atrophia	..	..	1	..	12	..	7	..	..	..
V. *Violent Deaths or Diseases.*										
1. Accidental :										
Ambustio	4	..	12	..	4	..	2	..	4	..
Explosio	..	1	6	..	..	..	..	..	..	..
Insolatio	..	..	4	..	1	..	..	..	..	..
Submersio	1	..	..	1	..	1	..	2	..	1
Asphyxia..	..	..	1	1	..	..	..	..	..	..
Fractura	2	..	14	2	5	..	6	..	1	..
Amputatio	..	..	1	..	..	..	1	..	..	..
Contusio	44	1	182	..	57	..	26	..	56	..
Commotio	..	..	2	1	2	1	..	..	..	..
Vulnus Sclopetarium	..	..	7	1	..	..	2	1	..	..
,, Incisum..	30	..	81	..	54	..	16	..	42	..
Luxatura..	..	..	6	..	1	..	1	..	1	..
Subluxatio	14	..	46	..	10	..	12	..	5	..
Vesiculæ Pedis	10	..	12	..	7	..	5	..	2	..
Venenatio	..	..	..	..	1	..	..	..	..	..
Morsus Canis	1	..	1	..	..	..	..	..	..	..
,, Serpentis	..	..	..	..	..	..	..	..	1	..
4. Suicidal :										
Suspendium	..	..	1	..	..	1	..	..	..	..
5. Executio :										
Suspendium	..	..	..	1	..	..	..	..	..	..
6. Punitus	1	..	12	..	3	..	1	..	..	..
Simulatio morbi	..	..	..	..	4	..	..	..	..	..
General Total	564	7	3906	40	1685	87	1078	16	1506	22

Causes of the Deaths of the Invalids.

	Cape.	Mauritius.	Ceylon.
Phthisis Pulmonalis	2	1	1
Paralysis	1	..	..
Amentia	1	..	..
Morbus Valv: Cordis	.	1	..
Bronchitis Chronica	..	1	..
Total	4	3	1

APPENDIX No. XXI.

Abstract, showing the Number of Men sent home from St. Helena, the Cape, Mauritius, and Ceylon, in 1862, recommended to be discharged as Invalids, or for Change of Climate.

Stations	St. Helena.		Cape of Good Hope.		Mauritius.		Ceylon.	
							White Troops.	
Diseases.	For Discharge.	For Change of Climate.	For Discharge.	For Change of Climate.	For Discharge.	For Change of Climate.	For Discharge.	For Change of Climate.
I. *Zymotic Diseases.*								
1. Miasmatic Diseases :								
Ophthalmia	..	2	5	3	1	..	2	2
Dysenteria Acuta	..	..	..	..	..	..	..	1
„ Chronica	..	..	2	2	1	4	..	7
Diarrhœa	..	1	..	..	1	2	..	1
Febris Intermittens	..	..	..	1	..	4	..	..
Rheumatismus Chronicus ..	..	1	8	4	4	3	1	4
2. Enthetic Diseases :								
Syphilis Secundaria	1	..	..	8	..	..	..	2
Iritis Syphilitica	..	..	..	..	1	..	..	..
Strictura Urethræ	..	..	..	1	..	..	..	..
II. *Constitutional Diseases.*								
2. Tubercular Diseases :								
Scrofula	..	..	1	..	3	..	..	..
Phthisis Pulmonalis	..	..	3	..	8	..	6	1
Hæmoptysis	..	..	..	1	..	..	..	..
III. *Local Diseases.*								
1. Of the Nervous System :								
Paralysis	..	..	1	..	..	..	..	2
Mania	2	..	..	..	..	..	..	..
Amentia	1	..	6	..	2	..	2	..
Epilepsia	..	..	1	..	1	..	1	..
Cephalæa	..	..	..	1	..	1	4	3
Dysecœa	..	..	..	..	1	..	..	..
Otitis	..	..	..	..	1	..	..	..
Cæcitas	..	..	2	..	..	..	..	..
2. Circulatory System :								
Carditis	..	..	3	5	..	..	..	..
Pericarditis	..	..	1	1	..	..	..	..
Hypertrophia Cordis	..	..	..	1	3	4	1	..
Morbus Valv: Cordis	1	..	..	..	1	..	..	..
„ Cordis	..	..	3	8	..	..	..	..
Palpitatio Cordis	..	..	..	3	..	..	..	..
Varix	..	..	..	..	1	..	2	..
3. Respiratory System :								
Bronchitis Chronica	..	..	5	4	5	5	..	..
Pleuritis	..	1	1	..	..	..	..	..
4. Of the Digestive System :								
Dyspepsia	..	1	..	..	1	1	..	..
Hernia	..	..	4	..	2	..	..	..
Fistula in ano	..	..	1	..	..	..	..	1
Hepatitis Chronica	..	..	..	1	1	2	3	11
Melæna	..	..	..	..	..	1	..	..

APPENDIX No. XXI.—*continued.*

Stations	St. Helena.		Cape of Good Hope.		Mauritius.		Ceylon. White Troops.	
Diseases.	For Discharge.	For Change of Climate.	For Discharge.	For Change of Climate.	For Discharge.	For Change of Climate.	For Discharge.	For Change of Climate.
5. Of the Urinary System:								
Hæmaturia	..	..	..	..	..	..	..	1
Enuresis	..	..	..	..	..	..	..	2
7. Of the Locomotive System:								
Arthritis	..	..	..	..	1	..	..	..
Contractura	..	..	1	..	5	..	..	..
Exostosis	..	..	..	..	..	..	..	1
Necrosis	..	..	..	..	1	..	..	..
8. Of the Integumentary System:								
Ulcus	..	..	..	1	2	..	..	1
IV. *Developmental Diseases.*								
4. Diseases of Nutrition:								
Atrophia	..	..	2	2	2	5	5	1
V. *Violent Deaths or Diseases.*								
1. Accidental:								
Fractura	1	..	1	..	..	..	..	..
Commotio	..	..	..	..	1	..	..	..
Vulnus Sclopetarium	..	..	..	..	..	..	1	..
,, Incisum	..	..	..	1	..	..	..	..
Luxatura	..	..	1	..	..	..	..	..
Subluxatio	..	..	..	..	1	..	..	..
Worn out	..	..	15	..	..	..	..	..
Total	6	6	67	48	51	32	28	41

APPENDIX No. XXII.

ABSTRACT, showing the Ages of the Troops serving at the Cape of Good Hope, and the Deaths at each Age, during the Year 1862.

	Under 20 Years.		20-24.		25-29.		30-34.		35-39.		40 and upwards.		Total.	
	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.
Royal Artillery ..	2	..	63	1	49	1	37	..	11	..	1	1	163	3
Royal Engineers ..	2	..	63	..	97	2	34	..	12	..	3	..	211	2
2nd Batt. 10th Foot .	162	..	484	3	148	2	47	1	10	..	3	1	854	7
2nd „ 11th „ .	220	..	387	3	181	2	57	1	6	..	1	..	852	6
2nd „ 13th „ .	47	..	373	4	345	3	58	..	16	..	9	..	848	7
85th Foot	16	..	157	1	325	2	133	3	90	..	13	1	734	7
Cape Mounted Rifles .	123	2	164	1	330	..	136	5	80	2	8	1	841	11
Total	572	2	1,691	13	1,475	12	502	10	225	2	38	4	4,503	43

APPENDIX No. XXIII.

RETURN, showing the Admissions into Hospital and Deaths among the Troops serving in Australia, New Zealand, and China, during the year 1862.

Stations	Australia.		New Zealand.		South China.				Shanghai.				Tien-tsin and Taku.	
					White.		Black.		White.		Black.		White.	
Strength	1,000		5,482		1,181		664		1,362		1,061		968	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
I. *Zymotic Diseases.*														
1. Miasmatic:														
Variola	..	..	..	..	..	..	1	..	11	1	3	1	58	10
Varicella	..	..	..	..	..	..	2	..	..	..	..	..	..	..
Tonsillitis	7	..	94	..	16	..	..	..	7	..	2	..	6	..
Influenza	29	..	82	..	3	..	..	..	..	..	..	..	..	..
Ophthalmia.. ..	19	..	334	..	76	..	5	..	95	..	11	..	50	..
Erysipelas	1	..	7	..	1	..	..	..	2	..	..	..	2	..
Furunculus.. ..	17	..	77	..	3	..	..	..	2	..	1	..	1	..
Anthrax	1	..	4	..	..	..	..	..	..	..	..	..	..	..
Dysenteria Acuta ..	5	1	68	..	31	7	35	..	238	46	76	..	9	1
" Chronica.	..	..	3	..	34	1	3	1	6	4	4	2	3	..
Diarrhœa	37	..	154	1	165	3	39	..	542	29	207	1	108	..
Cholera	..	..	2	..	1	..	..	..	141	79	40	15	41	40
Febris Intermittens	2	..	21	..	422	1	375	..	615	6	749	3	27	1
" Remittens ..	6	1	..	..	3	..	..	..	363	7	8	2	11	..
" Typhoides ..	..	..	..	1	1	1	..	..	1	1	..	..	2	1
" Typhus ..	..	..	..	..	..	..	..	..	3	2	..	..	1	..
" Continua ..	19	..	114	..	76	..	5	..	272	9	14	..	126	6
Rheumat: Acutus ..	17	..	63	..	19	..	113	..	41	..	58	..	30	..
" Chronicus	49	..	79	..	57	..	36	..	23	1	43	..	4	..
Parotitis	..	..	6	..	3	..	..	..	..	..	1	..	..	..
Pertussis	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Vaccinia	..	..	..	..	..	..	..	..	..	..	..	..	6	..
2. Enthetic:														
Syphilis Primaria ..	14	..	35	..	172	..	14	1	121	..	30	..	72	..
" Secundaria	11	..	12	..	58	..	11	..	10	..	5	..	7	..
Iritis Syphilitica ..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Bubo	10	..	4	..	49	..	11	..	58	..	13	..	25	..
Gonorrhœa	67	..	60	..	171	..	14	..	89	..	14	..	75	..
Phymosis, &c. ..	3	..	3	..	..	..	1	..	1	..	1	..	2	..
Orchitis (Gonorr:) ..	7	..	1	..	61	..	6	..	35	..	7	..	20	..
Strictura Urethræ ..	2	..	13	..	5	..	1	..	5	..	1	..	2	..
Verrucæ	1	..	..	..	1	..	..	..	..	..	1	..	1	..
Ulcus Penis . ..	..	..	3	..	..	..	..	..	..	..	..	..	..	..
3. Dietic:														
Scorbutus	1	..	1	..	..	..	..	..	5	..	2	..	..	..
Purpura	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Ebriositas	26	..	83	1	59	1	1	..	43	..	1	..	34	1
4. Parasitic:														
Porrigo	1	..	11	..	..	..	..	..	..	..	..	..	1	..
Scabies	1	..	70	..	..	..	2	..	..	..	4	..	2	..
Tænia Solium ..	..	..	5	..	1	..	..	..	4	..	..	..	2	..
Ascaris Lumbricoides	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Vermes	..	..	..	..	..	..	..	..	..	..	..	..	5	..
Dracunculus ..	..	..	..	..	..	..	..	..	..	..	1	..	..	..

Appendix No. XXIII.—*continued.*

Stations	Australia.		New Zealand.		South China.				Shanghai.				Tien-tsin and Taku.	
					White.		Black.		White.		Black.		White.	
Strength	1,000		5,482		1,181		664		1,362		1,061		968	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
II. *Constitutional Diseases.*														
1. Diathetic:														
Lumbago	3	..	29	..	2	..	..	..	6	..	1	..	4	..
Anæmia	..	..	1	..	1	..	..	..	..	..	..	..	1	..
Anasarca	..	..	1	1	..	..	1	..	4	2	2	..	..	..
Tumores	..	..	..	..	..	..	..	..	..	..	2	..	..	..
Carcinoma	..	..	2	2	1	..	..	..	..	..	1	1	..	..
2. Tubercular:														
Scrofula	..	..	3	1	1	..	..	..	1	..	..	..	..	..
Phthisis Pulmonalis	20	7	22	8	6	2	2	..	2	1	..	..	2	..
Hæmoptysis ..	7	..	4	..	1	..	..	..	..	..	..	..	..	..
III. *Local Diseases.*														
1. Nervous Syst.:														
Meningitis	..	..	..	..	..	..	..	..	..	1	2	..	..	..
Apoplexia	1	1	..	2	..	1	..	..	2	2	..	..	1	1
Paralysis	1	..	7	..	3	..	1	..	1	1	2	..	..	..
Delirium Tremens ..	5	1	19	..	11	..	1	..	14	2	..	..	8	..
Mania	1	..	4	..	..	..	1	..	..	..	..	..	..	..
Amentia	2	..	9	..	2	..	4	..	..	..	..	..	..	..
Epilepsia	6	..	11	1	..	..	..	..	1	..	1	..	..	..
Chorea	1	..	2	..	..	..	..	..	..	..	..	..	..	..
Hysteria	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Convulsio	..	..	..	..	3	..	..	..	..	..	..	..	..	..
Cephalæa	2	..	19	1	4	..	..	..	1	..	1	..	8	..
Neuralgia	2	..	9	..	6	..	1	..	13	..	3	..	4	..
Dysecœa	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Otitis	..	..	31	..	5	..	3	..	3	..	4	..	6	..
Cæcitas	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Amaurosis	..	..	2	..	..	..	..	..	..	..	..	..	..	..
Myopia	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Pterygium	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Odontalgia	..	..	..	..	..	..	..	..	..	..	2	..	4	..
2. Circulatory Syst.:														
Carditis	..	..	..	..	..	..	..	..	1	..	..	..	1	1
Pericarditis	..	..	4	..	..	..	..	..	..	..	..	..	..	..
Hypertrophia cordis	12	1	7	..	3	..	..	..	1	1	..	..	1	..
Degeneratio ,,	..	..	..	..	..	..	..	1	..	1	..	..	..	1
Morbus Valv: ,,	..	..	17	1	6	1	..	..	2	..	..	..	..	..
Palpitatio ,,	..	..	1	..	1	..	..	..	..	..	..	..	1	..
Aneurisma Aortæ ..	1	2	2	5	1	1	..	..	1	1	..	..	..	..
Aneurisma	..	1	..	..	1	..	..	..	..	..	..	..	..	..
Varix	..	..	8	..	3	..	..	..	..	..	..	..	2	..
Syncope	..	..	3	..	1	..	..	..	..	..	..	..	..	..
Angina Pectoris ..	..	..	2	1	..	..	..	..	..	..	..	..	..	..
Phlebitis	..	..	2	..	..	..	..	..	..	..	..	..	..	..
Hæmorrhagia ..	..	..	1	1	..	..	..	..	..	..	..	..	..	..

Appendix No. XXIII.—*continued.*

Stations	Australia.		New Zealand.		South China.				Shanghai.				Tien-tsin and Taku	
					White.		Black.		White.		Black.		White.	
Strength	1,000		5,482		1,181		664		1,362		1,061		968	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
3. Respiratory Syst.:														
Laryngitis	..	..	1	..	1	..	..	..	..	..	..	..	..	..
Bronchitis Acuta ..	7	1	144	2	40	1	19	1	58	2	45	1	93	2
„ Chronica	6	..	35	..	28	..	9	1	27	1	26	..	6	..
Pleuritis	..	..	32	1	..	..	2	..	1	..	7	..	1	..
Pneumonia	..	..	8	1	3	1	2	..	3	..	2	..	4	..
Asthma	..	..	3	..	..	..	5	..	..	..	10	..	1	..
Epistaxis	..	..	2	..	..	..	..	..	1	..	..	..	..	..
Apoplexia Pulm: ..	..	..	1	1	..	..	..	..	..	..	..	..	..	..
Pleurodynia ..	..	..	..	..	1	..	..	..	..	..	..	..	1	..
4. Digestive Syst.:														
Gastritis	..	..	1	..	1	..	..	..	..	1	..	..	..	..
Enteritis	..	..	2	..	..	..	..	..	..	..	..	..	..	..
Peritonitis	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Obstipatio	8	..	32	..	..	..	..	..	1	..	..	..	5	..
Dyspepsia	24	..	55	..	14	..	4	..	46	..	1	..	11	..
Colica	7	..	16	..	18	1	24	..	16	..	40	..	13	..
Ileus	..	..	1	..	..	..	..	..	..	..	1	1	..	..
Hernia	1	..	..	..	..	..	..	..	1	..	..	..	2	..
Hæmorrhois ..	8	..	24	..	13	..	4	..	11	..	8	..	7	..
Fistula in ano ..	1	..	2	..	2	..	..	..	3	..	..	..	..	..
Splenitis	..	..	2	..	..	..	..	..	5	..	2	..	..	..
Hepatitis Acuta ..	1	..	3	..	32	..	9	..	23	4	5	..	27	..
„ Chronica	5	..	9	1	31	1	3	1	17	7	1	1	4	1
Icterus	..	..	5	1	5	..	..	..	4	..	9	..	2	..
Ascites	..	..	6	2	1	..	..	..	1	1	1	..	2	..
5. Urinary Syst.:														
Nephritis	1	..	1	1	1	1	..	..	..	..	1	..	1	..
Nephria	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Abscessus Renalis ..	..	..	1	1	..	.	..	..	..	..	..	..	..	..
Ischuria	1	..	1	..	..	..	..	..	..	..	..	..	1	..
Hæmaturia	..	..	4	..	..	..	..	..	..	..	..	..	..	..
Cystitis	1	1	..	..	..	..	..	..	..	..	..	..	1	..
Enuresis	..	..	6	..	1	..	..	..	..	..	..	..	1	..
Calculus Vesicæ ..	..	..	2	..	..	..	..	..	..	..	..	..	..	..
6. Reproductive System:														
Hydrocele	..	..	1	..	4	..	..	..	1	..	..	..	..	..
Orchitis (not Gon:)..	2	..	22	..	..	..	..	..	2	..	1	..	1	..
7. Locomotive System:														
Arthritis	..	..	4	..	..	..	..	..	..	..	..	..	..	..
Synovitis	..	..	3	..	2	..	..	..	..	..	..	..	1	..
Contractura.. ..	3	..	3	..	..	..	..	..	..	..	..	..	..	..
Periostitis	..	..	3	..	..	..	..	..	..	..	..	..	2	..
Exostosis	..	..	3	..	..	..	..	..	..	..	..	..	..	..
Caries	..	..	..	..	1	..	..	..	..	..	..	..	..	..

Appendix No. XXIII.—*continued.*

Stations	Australia.		New Zealand.		South China.				Shanghai.				Tien-tsin and Taku.	
					White.		Black.		White.		Black.		White.	
trength	1,000		5,482		1,181		664		1,362		1,061		968	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Necrosis	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Atrophia muscul: ..	..	..	1	..	..	..	..	..	..	..	3	1	..	..
8. Integumentary System:														
Urticaria	..	..	6	..	1	..	..	..	..	..	..	..	3	..
Eczema	2	..	8	..	..	..	..	..	1	..	..	..	2	..
Herpes	..	..	14	..	2	..	..	..	1	..	..	..	3	..
Impetigo	..	..	6	..	..	..	..	..	..	..	..	..	..	..
Psoriasis	2	..	8	..	..	..	1	..	10	..	6	..	..	..
Lichen	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Acne	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Mentagra	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Pemphigus	..	..	2	..	..	..	..	..	..	..	..	..	..	..
Pernio	..	..	..	..	..	..	..	..	..	..	..	..	2	..
Phlegmon	32	..	154	..	103	..	15	..	39	..	12	..	46	..
Abscessus	16	..	44	2	3	..	6	..	5	..	30	..	8	1
Paronychia	1	..	28	..	4	..	2	..	7	..	3	..	8	..
Ulcus	10	..	145	..	31	..	5	..	34	..	43	..	21	..
IV. *Developmental Diseases.*														
4. Diseases of Nutrition:														
Atrophia	..	..	2	..	84	4	..	..	12	..	..	..	..	..
V. *Violent Deaths or Diseases.*														
1. Accidental:														
Ambustio	3	..	20	..	1	..	3	..	6	..	7	..	6	..
Explosio	2	..	1	..	..	..	..	..	1	..	..	..	..	..
Gelatio	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Insolatio	..	..	..	..	4	1	..	..	6	2	..	..	..	..
Submersio	..	1	..	2	1	3	..	..	..	3	..	1	..	..
Asphyxia	1	1	..	..	..	..	..	..	..	..	..	..	..	..
Fractura	1	..	13	2	5	2	..	..	..	..	3	..	1	..
Privatio	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Amputatio	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Extirpatio Oculi ..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Contusio	68	..	225	..	60	..	24	..	26	..	50	1	45	..
Commotio	..	..	2	2	..	..	..	..	..	..	..	..	..	..
Vulnus Sclopetarium	..	..	1	..	..	..	..	..	..	..	..	..	..	..
„ Incisum ..	13	..	84	..	19	..	2	..	24	1	12	..	16	..
Luxatura	..	..	5	..	..	..	..	..	..	..	..	..	1	..
Subluxatio	14	..	92	..	28	..	12	..	10	..	..	..	24	..
Vesiculæ Pedis ..	18	..	14	..	..	..	..	..	1	..	..	..	..	..
Ruptura Splenis ..	..	..	1	1	..	..	..	..	..	..	..	..	..	..
Morsus	..	..	1	..	..	..	..	..	..	..	..	..	..	..
2. In Battle:														
Vulnus Sclopetarium	..	..	..	..	..	..	..	..	11	3	12	1	..	..
3. Homicidal:														
Vulnus Incisum ..	..	..	1	1	..	..	..	..	..	..	..	..	..	..
Homicidium ..	..	..	..	..	..	..	..	..	..	..	..	1	..	..

Appendix No. XXIII.—*continued.*

Stations	Australia.		New Zealand.		South China.				Shanghai.				Tien-tsin and Taku.	
					White.		Black.		White.		Black.		White.	
Strength	1,000		5,482		1,181		663		1,362		1,061		968	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
4. Suicidal:														
Vulnus Incisum ..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
„ Sclopetarium	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Venenatio	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Suicidium	..	..	..	..	..	..	..	..	..	..	..	..	..	1
5. Executio:														
Suspendium ..	..	..	..	1	..	..	..	..	..	..	..	1	..	..
6. Punitus ..	1	..	25	..	7	..	..	..	8	..	1	..	8	..
Simulatio morbi ..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Diseases not specified	1	..	..	..	..	..	..	..	10	..	..	..	5	..
No appreciable Disease ..	4	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	683	19	2991	49	2104	34	840	6	3219	222	1660	35	1162	68

Causes of the Deaths of the Invalids.

	Australia.	New Zealand.	China.
Febris Continua..	..	..	1
Dysenteria Chronica	..	..	5
Diarrhœa..	..	..	1
Cholera Spasmodica	..	..	7
Ebriositas	..	..	1
Syphilis Secundaria	..	..	2
Phthisis Pulmonalis	2	..	4
Paralysis..	..	..	1
Bronchitis Chronica	..	..	1
Atrophia..	..	..	1
Diseases not specified	1	1	..
Total	3	1	24

APPENDIX No. XXIV.

Abstract, showing the Number of Men sent home from Australia, New Zealand, and China, in 1862, recommended to be Discharged as Invalids, or for Change of Climate.

Stations	Australia.		New Zealand.		China.			
					White.		Natives sent to India.	
Diseases.	For Discharge.	For Change of Climate.	For Discharge.	For Change of Climate.	For Discharge.	For Change of Climate.	For Discharge.	For Change of Climate.
Ophthalmia	3	..	6	2	..	6	..	..
Dysenteria Chronica	..	..	..	1	..	..	..	..
Diarrhœa	..	..	1	..	..	5	..	..
Febris Intermittens	..	..	2	..	..	6	..	..
„ Continua	..	..	..	..	..	..	..	3
Rheumatismus Acutus	12	..	..	..	..	1	..	..
„ Chronicus	6	..	10	..	..	6	..	4
Syphilis Secundaria	..	..	1	1	..	2	..	1
Strictura Urethræ	..	..	1	..	..	..	..	..
Lumbago	..	..	..	1	..	..	..	..
Anasarca	..	..	1	..	..	..	..	..
Scrofula	2	..	2	..	..	2	..	..
Phthisis Pulmonalis	5	..	8	1	..	2	..	..
Paralysis	2	..	2	..	..	2	..	1
Mania	..	..	2	..	..	..	..	2
Amentia	..	..	8	..	..	..	..	1
Chorea	..	..	..	1	..	..	..	..
Cephalæa	..	..	1	1	..	1	..	..
Dysecœa	..	..	1	..	..	..	..	..
Otitis	..	..	1	2	..	..	..	..
Amaurosis	..	..	1	..	..	..	..	..
Cataractes	..	..	1	..	..	..	..	..
Myopia	..	..	2	..	..	..	..	..
Hypertrophia Cordis	1	..	2	..	..	2	..	..
Morbus Valv: Cordis	..	..	4	2	..	..	..	..
Aneurisma Aortæ	..	..	..	..	..	1	..	..
Varix	8	..	6	..	..	..	..	..
Angina Pectoris	..	..	1	..	..	..	..	..
Laryngitis	..	..	..	..	..	1	..	..
Bronchitis Acuta	1	..	..	..	..	1	..	..
„ Chronica	1	..	5	1	..	3	..	..
Pleuritis	..	..	1	..	..	..	..	..
Pneumonia	..	..	1	..	..	1	..	..
Asthma	..	..	1	..	..	1	..	..
Emphysema	..	..	..	1	..	..	..	..
Hæmorrhois	..	..	1	..	..	..	..	1
Fistula in ano	..	..	1	..	..	..	..	..
Hepatitis Chronica	1	..	3	..	..	3	..	..
Ascites	..	..	1	1	..	..	..	1
Nephritis	1	..	..	..	..	..	..	..
Nephria	..	..	1	..	..	..	..	..
Hæmaturia	..	..	1	..	..	..	..	..
Arthritis	..	..	2	..	..	..	..	..
Synovitis	..	..	..	..	..	1	..	..
Contractura	2	..	..	..	..	..	..	..

APPENDIX No. XXIV.—*continued.*

Stations	Australia.		New Zealand.		China.			
					White.		Natives sent to India.	
Diseases.	For Discharge.	For Change of Climate.	For Discharge.	For Change of Climate.	For Discharge.	For Change of Climate.	For Discharge.	For Change of Climate.
Exostosis	..	..	1	..	..	..	..	..
Caries	..	..	..	..	..	1	..	..
Atrophia Musculorum	..	..	1	..	..	..	..	..
Eczema	1	..	..	..	..	..	..	..
Abscessus	..	..	1	..	..	1	..	..
Ulcus	..	..	3	..	..	..	..	..
Atrophia	..	..	..	..	..	20	..	..
Explosio	..	..	..	..	..	1	..	..
Fractura	..	..	4	1	..	..	..	..
Contusio	..	..	1	..	..	1	..	..
Vulnus Sclopetarium	..	..	..	..	..	1	..	..
„ Incisum	..	..	2	..	..	..	..	..
In Battle—Vulnus Sclopetarium	..	..	1	..	..	..	..	..
Total	46	..	96	16	..	72	..	14

APPENDIX, No. XXV.

ABSTRACT showing the Ages of the Men serving in Australasia, and the Deaths in each Quinquennial Period of Life, during the Year 1862.

	Under 20.		20–24.		25–29.		30–34.		35–39.		40 and upwards.	
	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.
Royal Artillery ..	8	..	141	3	136	1	83	2	23	..	10	..
1st Bat. 12th Foot	59	..	361	..	231	8	57	1	68	3	22	1
2nd „ 14th „	56	..	765	7	297	4	90	..	21	..	5	..
40th Foot ..	102	..	523	..	251	6	124	5	42	1	3	..
57th „ ..	27		380	1	347	7	150	2	60	1	15	..
65th „ ..	3	..	241	2	337	..	267	..	191	2	25	1
70th „ ..	31	..	347	3	246	1	157	3	65	..	9	2
Total	286	..	2,758	16	1,845	27	928	13	470	7	89	4

APPENDIX, No. XXVI.

ABSTRACT showing the Ages of the Men serving in China, and the Deaths in each Quinquennial Period of Life, during the Year 1862.

	Under 20.		20–24.		25–29.		30–34.		35–39.		40 and upwards.	
	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.
Royal Artillery ..	4	..	198	10	148	18	88	2	27	4	..	..
Royal Engineers ..	..	..	33	4	47	8	12	..	3	..	..	..
31st Regiment ..	5	..	249	42	331	49	178	28	63	24	2	2
67th „ ..	6	..	453	33	207	28	199	27	63	11	..	..
99th „ ..	17	..	562	16	298	14	79	5	22	6	5	1
Army Hospital Corps	..	..	23	..	32	2	19	..	13	..	..	..
Total	32	..	1,518	105	1,063	119	575	62	191	45	7	3

APPENDIX No. XXVII.

ABSTRACT, showing the Admissions into Hospital and Deaths among Her Majesty's European Troops serving in Bengal, Madras, and Bombay, during the year 1862.

Stations	Bengal.		Madras.		Bombay.	
Average Strength	39,312		12,531		11,870	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
I. *Zymotic Diseases.*						
1. Miasmatic:						
Variola	14	2	13	1	12	2
Varicella	5	..	6	..	1	..
Morbilli	3	..	3	..	1	..
Diphtheria	..	..	1	..	..	..
Tonsillitis	572	1	131	..	165	1
Influenza	245	..	35	..	41	..
Coryza	..	..	8	..	56	..
Ophthalmia	2,184	..	384	..	611	..
Erysipelas	66	3	19	1	13	..
Furunculus	385	..	134	..	47	..
Anthrax	7	1	3	..	..	..
Pyæmia	..	1	..	..	..	..
Dysenteria Acuta	1,541	70	652	13	} 567	38
„ Chronica	235	18	212	6		
Diarrhœa	4,274	42	836	5	1,023	15
Cholera Spasmodica	520	326	88	46	78	55
Febris Intermittens	21,643	33	1,874	3	6,328	4
„ Remittens	2,089	39	282	4	1,217	21
„ Typhoides	10	6	14	2	7	3
„ Typhus	6	1	12	3	1	1
„ Continua	6,158	51	576	3	1,234	10
Rheumatismus Acutus	1,672	1	429	1	713	..
„ Chronica ..	1,139	1	432	..	..	..
Parotitis	13	..	7	..	6	..
Pertussis	4	..	..	..	..	..
Vaccinia	2	..	..	..	..	..
2. Enthetic:						
Syphilis Primaria	4,498	1	1,342	..	1,326	..
„ Secundaria	1,024	7	436	3	286	2
Ulcus Penis	127	..	9	..	77	..
Cachexia Syphiloidea	..	..	1	..	..	..
Iritis Syphilitica	31	..	19	..	7	..
Bubo	1,762	..	694	..	521	..
Gonorrhœa	4,062	..	1,015	..	1,196	..
Phymosis, &c.	54	..	18	..	15	..
Orchitis (Gonorrhœal	331	..	92	..	72	..
Strictura Urethræ	123	1	42	..	47	..
Verrucæ	85	..	19	..	38	..
Ophthalmia (Gonorrhœal) ..	1	..	..	..	1	..
3. Dietic:						
Scorbutus	41	..	9	..	69	..
Purpura	7	..	..	..	3	..
Ebriositas	328	2	294	2	264	4
Bronchocele	4	..	..	..	..	..

Appendix No. XXVII.—*continued.*

Stations	Bengal.		Madras.		Bombay.	
Average Strength	39,312		12,531		11,870	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
4. Parasitic:						
Porrigo	9	..	4	..	9	..
Scabies	38	..	31	..	13	..
Tænia Solium	158	..	30	..	75	..
Ascaris Lumbricoides	1	..	1	..	..	..
Vermes	39	..	3	..	..	..
Dracunculus	4	..	6	..	24	..
Phthiriasis	2	..	..	..	1	..
Aphthæ	3	..	1	..	1	..
II. *Constitutional Diseases.*						
1. Diathetic:						
Podagra	..	..	1	..	..	..
Lumbago	91	..	31	..	32	..
Ischias	..	..	..	..	4	..
Anæmia	174	5	16	..	17	..
Anasarca	24	3	6	2	6	..
Tumores	21	..	14	..	14	..
Lupus	2	..	..	..	..	..
Carcinoma Encephaloides	2	2	..	..	1	2
Scirrhoma	..	..	1	..	2	2
2. Tubercular:						
Scrofula	95	..	59	..	30	..
Phthisis Pulmonalis	227	66	101	15	56	12
Hæmoptysis	82	2	22	3	21	..
Abscessus Psoanus	..	..	3	1	..	..
III. *Local Diseases.*						
1. Nervous System:						
Encephalitis	4	1	2	1	..	..
Meningitis	9	2	3	1	1	1
Mollities Cerebri	1	1	..	..	..	..
Myelitis	1	..	..	..	1	..
Apoplexia	42	31	10	10	5	5
Paralysis	42	6	29	4	20	5
Delirium Tremens	109	13	48	10	37	3
Mania	33	..	9	..	6	..
Amentia	60	..	38	1	31	..
Fatuitas	..	..	2	..	..	..
Epilepsia	132	1	44	..	41	1
Convulsio	4	..	5	1	3	..
Tetanus	2	2	2	..	..	..
Chorea	3	..	..	..	..	..
Hysteria	6	..	..	..	..	..
Neuralgia	90	..	22	..	22	..
Cephalæa	229	..	92	..	88	..
Vertigo	6	..	..	..	8	..
Iritis	12	..	2	..	3	..
Amaurosis	1	..	5	..	1	..
Cataractes	1	..	..	..	1	..
Glaucoma	1	..	..	..	..	..
Cæcitas	36	..	5	..	1	..
Hemeralopia	..	..	..	..	1	..
Nyctalopia	3	..	..	..	..	..
Myopia	1	..	..	..	..	..

Appendix No. XXVII.—*continued.*

Stations	Bengal.		Madras.		Bombay.	
Average Strength	39,312		12,531		11,870	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Fistula Lachrymalis	..	..	1	..	..	..
Polypus Nasi	1	..	2	..	..	..
Balbuties..	1	..	..	..	..	..
Odontalgia	1	..	2	..	10	..
Otitis	339	..	92	..	76	..
Dysecœa	23	..	13	..	3	..
Rabies	3	3	1	1	2	2
2. Circulatory System:						
Carditis	17	1	40	1	27	..
Pericarditis	15	..	17	..	16	..
Hypertrophia Cordis	48	1	23	1	23	..
Atrophia Cordis..	..	..	2	..	..	..
Morbus Valv: Cordis	107	6	72	13	25	2
Palpitatio Cordis	31	..	1	..	36	..
Angina Pectoris..	11	..	4	..	6	..
Morbus Cordis	9	..	..	2	..	..
Syncope	2	..	..	..	3	..
Degeneratio Cordis	2	1	9	2	1	1
Aneurisma Aortæ	8	4	2	1	3	2
Aneurisma	12	7	4	1	..	..
Varix	27	..	16	..	23	..
Phlebitis..	2	..	..	..	..	..
3. Respiratory System:						
Laryngitis	13	..	6	..	1	..
Œdema Glottidis	1	1	..	..	..	..
Bronchitis Acuta	1,202	10	387	2	409	6
„ Chronica	191	3	67	1	..	..
Pleuritis..	125	2	23	1	23	..
Empyema	..	..	1	..	..	..
Pneumonia	95	14	17	2	20	4
Apoplexia Pulmonalis	1	1	2	..	..	..
Asthma	46	3	26	..	12	..
Emphysema	7	..	..	..	..	..
Pleurodynia	53	..	4	..	5	..
Epistaxis..	19	..	3	..	6	..
4. Digestive System:						
Stomatitis	8	..	4	..	2	..
Glossitis..	1	..	..	..	1	..
Pharyngitis	3	..	2	..	3	..
Gastritis..	45	2	6	..	7	..
Enteritis..	17	7	7	..	3	1
Peritonitis	25	10	3	..	9	4
Obstipatio	115	..	72	..	47	..
Dyspepsia	861	2	403	1	266	..
Colica	577	..	65	..	252	..
Ileus	5	2	..	..	..	..
Hæmatemesis	18	..	1	..	2	..
Melæna	2	..	3	..	2	1
Hernia	38	..	27	..	15	..
Hæmorrhois	454	1	104	1	114	1
Fistula in Ano	38	..	18	..	14	..
Prolapsus Ani	..	..	1	..	1	..
Splenitis..	284	3	41	..	102	1

Appendix No. XXVII.—*continued.*

Stations	Bengal.		Madras.		Bombay.	
Average Strength	39,312		12,531		11,870	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Hepatitis Acuta	1,501	68	492	23	613	29
„ Chronica	790	44	212	12	..	..
Cirrhosis	..	..	..	..	1	..
Icterus	268	4	50	..	76	3
Chololithus	..	..	1	..	..	..
Ascites	16	1	1	..	5	..
5. Urinary System:						
Nephritis	25	3	6	..	12	..
Nephria	8	1	8	1	3	1
Ischuria	15	..	2	..	6	..
Hæmaturia	15	1	2	..	3	..
Lithiasis	1	..	..	..	..	..
Cystitis	12	..	6	..	6	..
Fistula in Perineo	3	..	..	..	4	..
Enuresis	19	..	3	..	4	..
Diabetes	3	..	2	..	2	..
Morbus Prostaticus	..	..	1	..	..	..
6. Reproductive System:						
Varicocele	6	..	5	..	2	..
Hydrocele	22	..	25	..	6	..
Sarcocele	3	..	..	..	2	..
Orchitis (not Gonorrhœal)	647	1	226	..	144	..
Fungus Testis	1	..	..	..	..	..
7. Locomotive System:						
Arthritis	20	..	13	..	6	..
Synovitis	54	..	17	..	15	..
Hydrarthrus	1	..	1	..	..	..
Contractura	6	..	6	..	1	..
Periostitis	76	..	23	..	24	..
Exostosis	2	..	1	..	1	..
Caries	22	..	8	..	1	..
Necrosis	11	..	2	..	3	..
Atrophia Musculorum	..	..	1	..	6	..
8. Integumentary System:						
Urticaria	23	..	7	..	18	..
Eczema	42	..	24	..	26	..
Herpes	127	..	32	..	16	..
Impetigo	7	..	2	..	..	..
Psoriasis	58	..	19	..	19	..
Lichen	11	..	9	..	5	..
Ecthyma	8	..	..	..	5	..
Prurigo	13	..	..	..	..	..
Pityriasis	1	..	..	..	1	..
Lepra	14	..	4	..	4	..
Alopecia	2	..	..	..	..	..
Acne	10	..	2	..	..	..
Clavus	1	..	..	..	..	..
Bullæ	1	..	..	..	..	..
Hordeolum	2	..	..	..	..	..
Roseola	2	..	..	..	2	..
Rupia	4	..	3	..	7	..
Pemphigus	1	..	9	..	1	..
Mentagra	..	..	1	..	1	..
Ephelis	..	..	1	..	..	..

Appendix No. XXVII.—*continued.*

Stations	Bengal.		Madras.		Bombay.	
Average Strength	39,312		12,531		11,870	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Elephantiasis	..	..	2	..	..	..
Phlegmon	1,480	..	544	..	582	..
Abscessus	360	..	124	1	61	1
Paronychia	187	..	37	..	43	..
Ulcus	1,583	1	475	1	424	..
IV. *Developmental Diseases.*						
Atrophia	215	3	72	2	51	1
Fatuitas	..	..	2	..	..	..
V. *Violent Deaths or Diseases.*						
1. Accidental:						
Ambustio	39	..	38	..	7	..
Explosio	8	2	7	..	4	..
Insolatio	41	11	22	7	32	12
Submersio	3	10	2	7	..	4
Suspendium	1	..	..	..	..	..
Asphyxia	1	2	..	..	..	..
Fractura	122	9	85	2	50	1
Amputatio	2	..	3	..	..	..
Ictus Fulminis	1	1	..	..	..	..
Contusio	1,743	..	676	1	698	..
Commotio	11	1	5	2	3	1
Vulnus Sclopetarium	23	1	12	..	5	..
,, Incisum	296	..	160	..	124	..
Luxatura	39	..	12	..	12	..
Subluxatio	574	..	232	..	197	..
Vesiculæ Pedis	123	..	41	..	25	..
Privatio	1	1	..	..	..	..
Venenatio	1	..	5	..	1	..
Morsus	1	..	..	..	..	..
,, Serpentis	7	1	..	..	2	..
,, Canis	5	..	2	..	1	..
,, Hominis	1	..	1	..	..	..
,, Ursæ	..	..	1	..	..	..
,, Equi	..	..	..	..	1	..
3. Homicidal:						
Concussio	1	1	..	..	..	..
Homicidium	..	1	..	..	..	..
4. Suicidal:						
Vulnus Incisum	1	1	..	..	..	..
,, Sclopetarium	2	6	..	..	..	7
Suspendium	..	3	..	..	1	2
Submersio	..	3	..	..	..	..
Suicidium	1	1	..	..	..	..
5. Execution:						
Suspendium	..	1	..	..	..	..
6. Punitus	41	..	32	..	13	..
Diseases not specified	32	1	10	1	..	..
No appreciable disease	3	1	3	..	3	..
Total	72,791	1,011	16,213	232	21,580	274

Appendix No. XXVII.—*continued.*

CAUSES of the Deaths of the Invalids.

	Bengal.	Madras.	Bombay.
Dysenteria	11	3	4
Diarrhœa	3	1	..
Febris Typhoides	..	..	1
Erysipelas	1	..	..
Syphilis Secundaria	3	..	1
Ebriositas	1	..	..
Anasarca	1	..	1
Phthisis Pulmonalis	24	7	2
Abscessus Psoanus	1	1	..
Meningitis	1	..	..
Apoplexia	1	..	..
Paralysis	2	1	1
Morbus Cordis	1	3	..
Aneurisma	1	1	..
Pneumonia	..	..	1
Gastritis	..	..	1
Hepatitis Chronica	2	2	1
Ascites	..	..	1
Nephria	1	..	..
Ulcus	1	..	..
Atrophia	..	..	1
Asthenia	..	2	..
Fractura	1	..	..
Submersio	1	..	..
Cause not specified	15	8	3
Total	72	29	18

APPENDIX No. XXVIII.

Abstract, showing the Diseases of the Men sent home as Invalids from Bengal, Madras, and Bombay in 1862, for Discharge from the Service and for Change of Climate.

Stations	Bengal.		Madras.		Bombay.	
Mean Strength	39,312		12,531		11,870	
	Recommended for		Recommended for		Recommended for	
Diseases.	Discharge.	Change of Climate.	Discharge.	Change of Climate.	Discharge.	Change of Climate.
Ophthalmia	24	27	..	6	2	11
Dysenteria Acuta ..	..	14	..	..	..	..
„ Chronica ..	3	18	..	28	..	12
Diarrhœa..	5	15	..	6	..	4
Febris Intermittens ..	9	38	5	3	..	8
„ Remittens ..	2	9	..	..	..	1
„ Continua.. ..	1	7	..	..	..	..
Rheumatismus Acutus ..	..	5	..	..	..	..
„ Chron: ..	105	72	53	24	16	35
Syphilis Primaria ..	..	2	..	..	..	..
„ Secundaria ..	19	40	..	20	4	8
Iritis Syphilitica ..	1	3	..	..	..	..
Orchitis (Gonorrhœal) ..	..	2	..	..	..	2
Strictura Urethræ ..	1	7	..	..	2	3
Scorbutus	..	2	..	..	2	6
Bronchocele	..	1	..	..	..	..
Podagra	..	..	..	..	1	..
Lumbago..	..	2	..	..	..	..
Anæmia	15	13	..	..	1	2
Anasarca..	..	1	..	..	..	..
Tumores	..	..	..	1	..	..
Scirrhoma	..	1	..	..	..	..
Scrofula	7	5	8	5	2	..
Phthisis Pulmonalis ..	50	18	4	20	16	6
Hæmoptysis	2	4	1	2	..	2
Apoplexia	..	2	..	..	..	..
Paralysis..	6	1	1	2	1	2
Delirium Tremens ..	..	..	..	..	..	1
Mania	1	3	3	1	3	..
Amentia	13	5	3	1	10	2
Epilepsia..	9	2	2	..	8	1
Cephalæa	3	2	2	..	..	1
Neuralgia	1	..	..	..	..	..
Dysecœa	4	1	1	..	2	4
Otitis	1	..	..	1	..	2
Cæcitas	3	2	1	..	1	..
Cataractes	1	..	..	..	..	..
Amaurosis	..	..	..	1	1	..
Myopia	..	..	..	..	1	..
Carditis	1	2	..	4	3	1
Pericarditis	1	..	..	..	3	1
Hypertrophia Cordis ..	8	8	..	8	5	4
Morbus Valv: Cordis ..	17	6	2	7	4	5
Degeneratio Cordis ..	1	..	..	2	..	..
Morbus Cordis	5	..	..	..	..	..
Palpitatio Cordis ..	1	1	..	..	4	6
Aneurisma	2	..	..	..	..	2
Varix	9	3	..	..	4	2
Angina Pectoris.. ..	1	1	..	..	..	..

Appendix No. XXVIII.—*continued.*

Stations	Bengal.		Madras.		Bombay.	
Mean Strength	39,312		12,531		11,870	
	Recommeuded for		Recommended for		Recommended for	
Diseases.	Discharge.	Change of Climate.	Discharge.	Change of Climate.	Discharge.	Change of Climate.
Bronchitis		13	2	4	4	6
Pleuritis	1	3	..	..	..	1
Pneumonia	..	2	..	..	1	..
Asthma	..	3	..	..	..	..
Emphysema	..	1	..	..	..	..
Gastritis	..	1	..	..	..	1
Peritonitis	..	1	..	..	..	1
Dyspepsia	2	13	2	4	1	4
Hernia	3	1	1	1	2	1
Hæmorrhois	..	2	..	1	..	..
Fistula in Ano	..	..	..	..	..	1
Prolapsus Ani	..	..	..	1	..	..
Splenitis	..	4	..	..	..	5
Hepatitis Acuta	..	10	..	1	..	..
„ Chronica	32	125	1	43	9	62
Icterus	..	2	..	..	1	..
Ascites	2	..	..	..	1	..
Cirrhosis	..	..	..	..	1	..
Nephria	1	..	..	2	..	..
Ischuria	..	..	..	..	..	1
Hæmaturia	..	1	..	..	..	..
Cystitis	..	1	..	..	..	1
Enuresis	..	..	..	2	1	..
Diabetes	..	..	..	..	1	..
Orchitis (not Gonorrhœal)	2	3	..	..	1	..
Sarcocele	..	1	..	..	..	..
Arthritis	1	..	..	..	..	..
Synovitis	2	2	..	1	..	2
Contractura	1	..	..	..	1	..
Periostitis	..	2	..	..	3	1
Exostosis	1	..	..	..	..	..
Caries	1	..	1	3	..	..
Necrosis	..	2	..	1	..	..
Atrophia Musculorum	..	..	..	..	..	2
Psoriasis	..	1	..	..	..	..
Phlegmon	1	..	..	..	..	..
Abscessus	..	1	..	3	..	..
Ulcus	3	9	..	..	..	3
Atrophia	37	61	14	12	2	6
Senectus	11	..	..	..	..	..
Explosio	1	..	..	..	..	..
Insolatio	..	..	..	1	..	..
Fractura	6	4	3	..	..	1
Amputatio	1	..	2	..	..	..
Contusio	1	1	..	..	2	2
Vulnus Sclopetarium	1	1	..	..	..	..
„ Incisum	1	..	..	..	1	..
Luxatura	2	..	..	..	..	1
Subluxatio	2	..	..	..	1	..
Vul: Sclop: (self-inflicted)	2	..	..	..	..	..
"Worn out"	2	..	8	12	..	..
Total	460	616	120	234	129	236

Appendix No. XXIX.

ABSTRACT, showing the Ages of the Troops serving in the Bengal Presidency, and the Deaths at each Age, during the Year 1862.

[NOTE.—No returns were available from the 1st Battalion 13th, 1st Battalion 19th, 1st Battalion 23rd, 38th, 52nd, 75th, 81st, and 101st Regiments of Foot, and the 3rd Battalion Rifle Brigade.]

	Under 20.		20–24.		25–29.		30–34.		35–39.		40 and Upwards.		Total.	
	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.
2nd Brigade, Royal Horse Artillery	13	..	341	24	286	7	60	2	27	1	6	1	733	35
5th ,, ,,	5	1	192	11	105	7	58	..	40	1	8	1	408	21
11th Brigade, Royal Artillery ..	32	..	378	7	521	16	145	7	26	..	3	..	1,105	30
14th ,, ,, ..	10	..	334	6	367	4	115	12	24	1	4	..	854	23
19th ,, ,, ..	3	..	66	6	32	2	32	8	47	2	1	..	181	18
22nd ,, ,, ..	9	..	132	1	69	..	37	..	26	..	8	1	281	2
24th ,, ,, ..	4	..	89	4	71	4	40	1	25	..	5	..	234	9
25th ,, ,, ..	2	..	52	..	38	1	18	1	7	1	2	..	119	3
Detachments	7	..	128	..	6	6	11	2	5	..	1	..	158	8
Total Artillery ..	85	1	1,712	59	1,495	47	516	33	227	6	38	3	4,073	149
2nd Dragoon Guards	5	..	143	1	249	..	40	2	14	..	10	1	461	4
7th ,, ,, ...	3	..	273	5	263	3	82	2	14	2	5	2	640	14
7th Hussars	2	..	19	4	353	1	248	..	59	2	15	..	696	7
8th ,, ...	3	..	197	4	313	5	67	1	36	..	16	..	632	10
19th ,, ...	..	..	115	1	223	..	12	..	12	..	..	..	362	1
20th ,, ...	..	..	140	4	56	..	33	..	16	1	17	1	262	6
Total Cavalry ..	13	..	887	19	1,457	9	482	5	151	5	63	4	3,053	42

Appendix No. XXIX.—*continued.*

ABSTRACT showing the Ages of the Troops serving in the Bengal Presidency—*continued.*

	Under 20.		20–24.		25–29.		30–44.		35–39.		40 and Upwards.		Total.	
	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strengt	Died.	Strength.	Died.
1st Battalion, 7th Foot	11	..	515	12	513	15	137	4	55	1	12	3	1,243	35
1st ,, 20th ,, ...	40	1	508	21	255	14	87	3	22	3	4	..	916	42
27th Foot	112	..	485	3	127	7	99	1	12	..	..	..	835	11
34th ,, ...	11	..	362	4	405	5	96	2	31	..	9	..	914	11
35th ,, ...	15	1	309	28	482	31	210	11	70	4	13	..	1,099	75
42nd ,, ...	24	1	399	11	324	11	93	..	61	3	3	..	904	26
43rd ,, ...	26	..	329	5	341	8	145	3	123	6	24	2	988	24
46th ,, ...	20	..	580	6	271	11	96	4	33	1	2	..	1,002	22
48th ,, ...	23	..	593	5	212	8	135	7	49	4	9	..	1,021	24
51st ,, ...	45	..	383	6	165	4	91	2	70	4	3	..	757	16
54th ,, ...	35	..	432	3	326	5	154	4	47	1	9	1	1,003	14
71st ,, ...	46	..	406	..	310	5	130	4	32	..	1	..	925	9
77th ,, ...	46	..	551	8	197	4	150	..	23	..	7	..	974	12
79th ,, ...	188	..	370	6	332	4	111	1	11	..	..	..	1,012	11
80th ,, ...	4	1	367	7	445	2	132	6	59	1	22	..	1,029	17
82nd ,, ...	41	..	598	11	254	11	113	10	39	4	8	1	1,053	37
88th ,, ...	18	..	411	4	409	4	97	2	32	2	3	..	970	12
89th ,, ...	63	..	407	3	258	4	169	..	69	..	14	..	980	7
90th ,, ...	18	..	324	8	457	8	91	2	9	2	..	..	899	20
92nd ,, ...	12	..	409	6	382	18	146	6	30	4	..	..	979	34
93rd ,, ...	97	..	306	28	526	38	98	6	29	6	12	1	1,068	79
94th ,, ...	10	..	219	2	346	3	87	..	45	2	6	..	713	7
97th ,, ...	70	..	627	13	233	8	48	1	31	1	2	..	1,011	23
98th ,, ...	68	..	424	5	323	6	141	6	82	5	15	1	1,053	23
104th ,, ...	46	..	311	18	376	6	111	6	23	2	4	2	871	34
107th ,, ...	7	..	232	7	138	2	41	3	11	1	4	..	433	13
2nd Battalion, Rifle Brigade ..	14	..	401	2	407	10	83	..	33	..	7	1	945	13
Total Infantry ..	1,110	4	11,258	232	8,814	252	3,091	94	1,131	57	193	12	25,597	651
Total Troops in Bengal ..	1,208	5	13,857	310	11,766	308	4,089	132	1,509	68	294	19	32,723	842

Appendix No. XXIX.—*continued.*

ABSTRACT showing the Ages of the Troops serving in the Madras Command, and the Deaths at each Age, during the Year 1862.

	Under 20 Years.		20–24.		25–29.		30–34.		35–39.		40 and Upwards.		Total.	
	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength	Died.
Royal Artillery	2	..	129	2	155	1	58	2	9	1	3	..	356	6
CAVALRY.														
1st Dragoon Guards	11	..	174	3	340	2	67	3	34	1	22	1	648	10
17th Lancers	13	..	227	4	284	4	57	3	9	..	9	1	599	12
Total	24	..	401	7	624	6	124	6	43	1	31	2	1,247	22
INFANTRY.														
1st Battalion, 1st Foot	10	..	363	7	394	7	155	4	53	1	8	..	983	19
1st „ 18th „	45	..	428	4	345	6	92	2	53	2	2	..	965	14
3rd „ 60th *„	17	..	241	4	643	11	116	9	21	..	4	..	1,042	24
66th Foot	5	..	358	1	381	5	184	4	67	4	15	..	1,010	14
68th „	4	..	376	2	440	4	119	1	63	..	5	..	1,007	7
69th „	23	..	417	4	231	7	196	6	101	7	5	..	973	24
74th „	371	..	247	17	141	14	80	6	25	2	4	..	868	39
91st „	8	..	438	7	349	12	118	4	71	..	21	2	1,005	25
Total	483	..	2,868	46	2,924	66	1,060	36	454	16	64	2	7,853	166
Total Troops in Madras ..	509	..	3,398	55	3,703	73	1,242	44	506	18	98	4	9,456	194

* One death in this corps is unavoidably omitted in consequence of the age of the man not being stated in the returns.

Appendix No. XXIX.—*continued.*

ABSTRACT showing the Ages of the Troops serving in the Bombay Command, and the Deaths at each Age, during the Year 1862.

	Under 20 Years.		20–24.		25–29.		30–34.		35–39.		40 and Upwards.		Total.	
	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength.	Died.	Strength	Died.	Strength.	Died.
4th Brigade, Royal Horse Artillery	7	..	91	4	142	4	117	3	96	1	7	..	460	12
18th „ Royal Artillery ..	17	..	220	3	168	3	116	3	82	2	40	..	643	11
21st „ „ „ ..	3	..	223	3	147	8	147	4	85	2	17	..	622	17
Sappers and Miners	..	..	43	..	29	3	14	..	1	..	..	..	87	3
Total	27	..	577	10	486	18	394	10	264	5	64	..	1,812	43
CAVALRY.														
3rd Dragoon Guards	5	..	254	3	233	7	64	9	29	..	13	..	598	19
6th Dragoons	..	..	365	18	209	5	50	1	18	2	16	3	658	29
Total	5	..	619	21	442	12	114	10	47	2	29	3	1,256	48
INFANTRY.														
1st Battalion 4th Foot	225	..	448	3	192	4	93	3	52	1	20	1	1,030	12
28th Foot	11	..	537	6	253	10	160	4	34	2	..	..	995	22
33rd „	20	1	555	6	242	6	163	1	27	2	5	1	1,012	17
44th „	8	..	305	6	364	1	197	3	107	3	17	..	998	13
56th „	19	1	467	16	253	16	139	17	61	3	15	2	954	55
72nd „	116	..	466	6	242	6	102	1	50	3	7	..	983	16
95th „	106	..	541	3	239	8	103	3	23	1	2	..	1,014	15
103rd „	105	..	155	3	256	3	171	4	59	3	..	..	746	13
106th „	1	..	173	9	65	3	157	9	55	3	3	1	454	25
109th „	..	..	162	..	292	5	197	4	80	1	47	1	778	11
Total	611	2	3,809	58	2,398	62	1,482	49	548	22	116	6	8,964	199
Total Troops in Bombay ..	643	2	5,005	89	3,326	92	1,990	69	859	29	209	9	12,032	290

APPENDIX No. XXX.

Abstract, showing the cases of Sickness and Deaths among Troops on board Ship, proceeding on Foreign Service.

Stations	India and China.		Mediterranean.		British America.	
Number of Men Embarked ..	3,776		196		4,148	
Average Annual Strength ..	1,152		11		298	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
I. *Zymotic Diseases.*						
1. Miasmatic:						
Scarlatina	1	..	..	..	..	..
Tonsillitis	21	..	1	..	8	..
Influenza..	20	..	..	..	2	..
Ophthalmia	17	..	..	..	2	..
Erysipelas	4	..	..	..	3	..
Furunculus	19	..	..	..	1	..
Dysenteria Acuta	..	..	..	..	1	..
,, Chronica	1	..	..	..	..	..
Diarrhœa	42	..	4	..	2	..
Febris Intermittens	4	..	..	..	2	..
,, Remittens	2	..	..	..	..	..
,, Typhoides	4	3	..	..	..	..
,, Continua	22	..	1	..	19	..
Rheumatismus Acutus	17	..	..	..	2	..
,, Chronicus ..	27	..	1	..	4	..
Parotitis	1	..	..	..	1	..
2. Enthetic:						
Syphilis Primaria	77	..	..	..	44	..
,, Secundaria	33	..	..	..	7	..
Iritis Syphilitica	..	..	..	..	1	..
Bubo	15	..	..	..	18	..
Gonorrhœa	78	..	2	..	21	..
Phymosis, &c.	5	..	..	..	..	..
Orchitis (Gonorrhœal)	9	..	..	..	5	..
Strictura Urethræ	3	..	..	..	..	..
3. Dietic:						
Scorbutus	5	..	..	..	..	..
Purpura	1	..	..	..	..	..
4. Parasitic:						
Porrigo	1	..	..	..	..	..
Scabies	10	..	..	..	..	..
Tænia Solium	2	..	..	..	..	..
Ascaris Lumbricoides	1	..	..	..	..	..
Pediculi Pubis	1	..	..	..	..	..
II. *Constitutional Diseases.*						
1. Diathetic:						
Lumbago	1	..	..	..	..	..
Anæmia	2	..	..	..	..	..

Appendix No. XXX.—*continued.*

Stations	India and China.		Mediterranean.		British America.	
Number of Men Embarked ..	3,776		196		4,148	
Average Annual Strength ..	1,152		11		298	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Anasarca	1	..	..	..	..	..
Tumores	1	..	..	..	..	..
2. Tubercular:						
Scrofula	3	..	..	..	..	..
Phthisis Pulmonalis	3	1	..	..	..	..
Hæmoptysis	3	..	..	..	..	..
III. *Local Diseases.*						
1. Nervous System:						
Apoplexia	..	..	..	..	1	..
Paralysis..	1	..	..	..	..	..
Epilepsia..	5	..	..	..	..	..
Cephalæa..	10	..	..	..	1	..
Neuralgia	3	..	..	..	..	..
Otitis	5	..	..	..	..	..
Iritis	1	..	..	..	..	..
Sea Sickness	..	..	..	..	2	..
2. Circulatory System:						
Carditis	..	..	..	..	1	1
Pericarditis	4	..	..	..	..	..
Hypertrophia Cordis	3	..	..	..	..	..
Palpitatio Cordis	1	..	..	..	..	..
Syncope	..	..	..	..	1	..
3. Respiratory System:						
Laryngitis	1	..	..	..	..	..
Bronchitis Acuta	32	..	1	..	9	..
„ Chronica	7	..	..	..	4	..
Pleuritis	3	1	1	..	1	..
Asthma	4	1	..	..	..	..
4. Digestive System:						
Gastritis	3	..	..	..	1	..
Obstipatio	45	..	1	..	1	..
Dyspepsia	21	..	1	..	7	..
Colica	10	..	1	..	..	..
Hæmatemesis	1	..	..	..	..	..
Hernia	1	..	..	..	..	..
Hæmorrhois	8	..	..	..	..	..
Hepatitis Chronica	3	..	..	..	1	..
Icterus	5	..	..	..	1	..
5. Urinary System:						
Enuresis	1	..	..	..	..	..
6. Reproductive System:						
Varicocele	2	..	..	..	..	..
Hydrocele	1	..	..	..	..	..
Orchitis (not Gonorrhœal)	7	..	..	..	..	..

Appendix No. XXX.—*continued.*

Stations	India and China.		Mediterranean.		British America.	
Number of Men Embarked ..	3,776		196		4,148	
Average Annual Strength ..	1,152		11		298	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
7. Locomotive System :		..	..	..	..	..
Arthritis	1	..	..	..	..	..
Synovitis	1	..	..	..	..	..
Periostitis	2	..	..	..	..	..
Caries	3					
8. Integumentary System :						
Eczema	5	..	..	..	..	..
Herpes	1	..	..	..	..	..
Impetigo	4	..	..	..	..	..
Psoriasis	1	..	..	..	..	..
Lichen	1	..	..	..	..	..
Pemphigus	1	..	..	..	..	..
Phlegmon	12	..	..	..	13	..
Abscessus	18	..	..	..	2	..
Paronychia	16	..	..	..	3	..
Ulcus	16	..	..	..	6	..
IV. *Developmental Diseases.*						
4. Diseases of Nutrition :						
Atrophia	2	..	..	..	..	..
V. *Violent Deaths or Diseases.*						
1. Accidental :						
Ambustio	11	..	..	..	6	..
Insolatio	5	..	..	..	..	..
Submersio	1	1	..	..	..	..
Fractura	7	..	..	..	7	..
Contusio	35	..	..	..	12	..
Vulnus Incisum	21	..	..	..	1	..
Luxatura	..	..	..	..	1	1
Subluxatio	22	..	..	..	1	..
6. Punitus	1	..	..	..	..	..
Total	832	7	14	..	226	2

APPENDIX No. XXXI.

Abstract, showing the cases of Sickness and Deaths among Troops on board Ship returning from Foreign Service.

Stations	India and China.		Cape of Good Hope.		British America.	
Number of Men Embarked	3,149		100		1,241	
Average Annual Strength	959		20		51	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
I. *Zymotic Diseases.*						
1. Miasmatic:						
Tonsillitis	5	..	..	..	1	..
Influenza	7	..	..	..	..	..
Ophthalmia	42	..	8	..	1	..
Dysenteria Acuta	174	35	..	..	..	..
„ Chronica	28	3	3	..	..	..
Diarrhœa	167	3	..	..	..	..
Cholera	9	4	..	..	..	..
Febris Intermittens	73	..	..	..	..	..
„ Remittens	1	..	..	..	..	..
„ Continua	19	..	..	..	2	..
Rheumatismus Acutus	7	1	4	..	1	..
„ Chronicus	64	1	..	..	4	..
2. Enthetic:						
Syphilis Primaria	38	..	2	..	1	..
„ Secundaria	30	..	..	..	1	..
Cachexia Syphiloidea	2	..	..	..	..	..
Ulcus Penis	3	..	..	..	..	..
Bubo	26	..	..	..	3	..
Gonorrhœa	53	..	1	..	..	..
Orchitis (Gonorrhœal)	17	..	..	..	..	..
Strictura Urethræ	8	..	..	..	..	..
Verrucæ	1	..	..	..	..	..
3. Dietic:						
Scorbutus	2	1	..	..	..	..
Ebriositas	1	1	..	..	..	..
4. Parasitic:						
Porrigo	1	..	..	..	..	..
Scabies	2	..	..	..	..	..
Tænia Solium	2	..	..	..	..	..
Dracunculus	2	..	..	..	..	..
II. *Constitutional Diseases.*						
1. Diathetic:						
Anasarca	2	..	..	..	..	..
Cachexia	1	..	..	..	..	..

Appendix No. XXXI.—*continued.*

Stations	India and China.		Cape of Good Hope.		British America.	
Number of Men Embarked ..	3,149		100		1,241	
Average Annual Strength ..	959		20		51	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
2. Tubercular:						
Scrofula	8	..	2	..	..	..
Phthisis Pulmonalis	14	3	4	1	2	..
III. *Local Diseases.*						
1. Nervous System:						
Encephalitis	3	..	..	..	..	..
Paralysis	7	..	1	1	..	..
Delirium Tremens	2	1	..	..	..	..
Mania	1	..	..	..	1	..
Amentia	1	..	6	1	2	..
Epilepsia	7	..	..	..	..	..
Cephalæa	7	..	1	..	..	..
Neuralgia	3	..	..	..	..	..
Otitis	4	..	1	..	..	..
Cæcitas	2	..	..	..	..	..
Iritis	..	..	..	..	1	..
Aphonia	1	..	..	..	..	..
2. Circulatory System:						
Carditis	1	..	..	..	..	..
Pericarditis	..	..	4	..	..	..
Hypertrophia cordis	3	1	..	..	..	..
Morbus Cordis	5	1	..	..	1	..
Aneurisma	5	1	..	..	1	..
3. Respiratory System:						
Laryngitis	1	..	..	..	..	..
Bronchitis Acuta	59	..	..	..	2	..
„ Chronica	26	1	..	..	1	..
Pleuritis	1	..	..	..	..	..
Pneumonia	2	..	..	..	..	..
Asthma	1	..	..	..	..	..
4. Digestive System:						
Obstipatio	17	..	..	..	..	..
Dyspepsia	40	..	..	..	..	..
Colica	9	..	..	..	..	..
Hernia	..	..	..	..	1	..
Hæmorrhois	9	..	..	..	..	..
Fistula in ano..	4	..	..	..	..	..
Splenitis	3	1	..	..	..	..
Hepatitis Acuta	16	2	..	..	..	..
„ Chronica	25	2	..	..	..	..
Icterus..	4	..	1	..	..	..
Ascites..	1	..	..	..	..	..
5. Urinary System:						
Nephritis	2	..	..	..	..	..
Ischuria	5	..	..	..	..	..
Hæmaturia	..	..	2	..	..	..
Enuresis	..	..	..	..	1	..

Appendix No. XXXI.—*continued.*

Stations	India and China.		Cape of Good Hope.		British America.	
Number of Men Embarked ..	3,149		100		1,241	
Average Annual Strength ..	959		20		51	
Diseases.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
6. Reproductive System :						
Orchitis (not Gonorrhœal) ..	4	..	..	..	..	..
7. Locomotive System :						
Arthritis	..	..	..	..	1	..
Synovitis	2	..	..	..	1	..
Caries	1	..	..	..	..	..
8. Integumentary System :						
Psoriasis	1	..	..	..	..	..
Phlegmon	41	..	..	..	1	..
Abscessus	16	..	..	..	..	..
Paronychia	4	..	..	..	1	..
Ulcus	24	..	2	..	8	..
IV. *Developmental Diseases.*						
4. Diseases of Nutrition :						
Atrophia	26	2	..	..	..	..
V. *Violent Deaths or Diseases.*						
1. Accidental :						
Ambustio	6	..	1	..	..	..
Gelatio	..	..	..	..	1	..
Submersio	..	1	..	..	..	..
Fractura	4	1	..	..	..	..
Amputatio	1	..	..	..	..	..
Contusio	44	..	..	..	..	..
Vulnus Sclopetarium.. ..	1	..	..	..	..	..
„ Incisum	5	..	..	..	1	..
Luxatura	1	..	..	..	..	..
Subluxatio	3	..	..	..	1	..
Morsus Serpentis	1	..	..	..	..	..
6. Punitus	1	..	..	..	..	..
Total	1,272	66	43	3	42	..

APPENDIX XXXII.

Abstract, showing the cases of Sickness and Deaths among Troops on board ship proceeding from one Colony or Station to another.

Stations	West Indies.		Mediterranean.	
Number of Men Embarked	868		3,355	
Average Annual Strength	20		64	
Diseases.	Admitted.	Died.	Admitted.	Died.
I. *Zymotic Diseases.*				
1. Miasmatic:				
Ophthalmia	..	..	5	..
Dysenteria Acuta	..	..	1	..
Diarrhœa	..	..	1	..
Febris Intermittens	1	..	..	..
„ Remittens	2	..	2	..
„ Continua	..	..	2	..
Rheumatismus Acutus	..	..	2	..
„ Chronicus	..	..	2	..
2. Enthetic:				
Syphilis Primaria	..	..	5	..
Bubo	..	..	3	..
Gonorrhœa	..	..	8	..
Strictura Urethræ	..	..	1	..
3. Dietic:				
Purpura	..	..	1	..
Ebriositas	..	..	1	..
II. *Constitutional Diseases.*				
2. Tubercular.				
Phthisis Pulmonalis	..	..	1	..
III. *Local Diseases.*				
1. Nervous System:				
Paralysis	..	..	1	..
Mania	..	..	1	..
Cephalæa	1	..	..	..
Otitis	..	..	1	..
2. Circulatory System:				
Hypertrophia cordis	..	..	1	..
3. Respiratory System:				
Bronchitis Chronica	..	..	2	..
4. Digestive System:				
Dyspepsia	..	..	3	..
5. Urinary System:				
Nephritis	..	..	1	1

Appendix No. XXXII.—*continued.*

Stations	West Indies.		Mediterranean.	
Number of Men Embarked	868		3,355	
Average Annual Strength	20		64	
Diseases.	Admitted.	Died.	Admitted.	Died.
6. Reproductive System:				
Orchitis (not Gonorrhœal)	..	..	2	..
7. Locomotive System:				
Periostitis	..	..	1	..
8. Integumentary System:				
Phlegmon	..	..	9	..
Abscessus	..	..	1	..
Ulcus	..	..	5	..
V. *Violent Deaths or Diseases.*				
1. Accidental:				
Fractura	..	..	1	..
Contusio	..	..	3	..
Vulnus Incisum	1	..	2	..
Subluxatio	..	..	1	..
Total	5	..	70	1

REPORT

OF THE

SANITARY BRANCH FOR 1862.

BY

T. G. LOGAN, M.D.,

INSPECTOR-GENERAL OF HOSPITALS AND HEAD OF THE
SANITARY BRANCH.

TO THE DIRECTOR-GENERAL

OF THE

ARMY MEDICAL DEPARTMENT.

Sir,

I have the honour to submit to you the Report of the Sanitary Branch of the Army Medical Department for the year 1862.

The Sanitary works which, in general measure, have been advanced in course of the years dating from 1858, and which were from time to time reported on, have afforded no important subject for additional remarks as regards the Home Stations on this occasion; such few observations as can be offered under this section are limited to two or three of the Stations where improvements of more particularly local specialty have been carried out.

Of the Foreign Stations of the Army a review is taken, after the manner of preceding years, of their sanitary conditions to the close of that now under report.

In the volume of the previous year, under the section on India, a general topographical sketch of the Bengal Presidency in its climatic diversities, by Staff Surgeon Dr. Crawford, gave information to the latest of the sanitary status of the Command. It is now proposed to introduce, seriatim, distinct Reports, in brief form, of the several Military Divisions; and, in commencement of this object, the Calcutta and Benares Divisions have been selected for the present occasion, the Report on these has been drawn up by Staff-Surgeon Dr. Massy who, in addition, has ably sketched the sanitary merits of the Hill Stations, Darjeeling, Nynee Tall, and Murree. A similar Report on the Himalayan Sanitarium of Landour by Staff-Surgeon Major L. C. Stewart is also added.

In connection with this head of the review such General Orders by his Excellency the Commander-in-Chief in India, as have borne on the sanitary interests of the troops, have been collated and are appended.

The contributed Papers to the Sanitary Section of this year's volume comprise,—

1. The Annual Review of the Progress of Hygiene, by Professor Dr. Parkes, F.R.S., full, as usual, of interest and affording the latest information on all the important sanitary incidents of the day.
2. The Value of Taste as a Measure of Quantity in Solutions of different Alkaline and Earthy Salts in Drinking Water, by Staff Assistant-Surgeon Dr. De Chaumont.
3. The Medical History of the 93rd Highlanders in the Field and Quarters, from 1858, with a Narrative of the Epidemic of Cholera which devastated the Corps in the Peshawur Valley in 1862, by Surgeon Munro, M.D.
4. The Annual Report of Inspector-General of Hospitals Dr. Muir, C.B., on the Barrack and Hospital Accommodation for the Troops in Canada in 1862.
5. A Synoptical Description of the Barrack and Hospital Accommodation in the Nova Scotia Command, as well as a brief Record of Arrangements at Halifax for the Landing and Transit of the Expeditionary Force in 1862, by J. D. M'Ilree, Deputy Inspector-General of Hospitals.
6. A Medico-Topographical Report of the Station of Lagos, West Coast of Africa, by Staff Assistant-Surgeon Rowe.

I have the honour to be,

Sir,

Your most obedient humble servant,

T. G. LOGAN,
Inspector-General.

6, *Whitehall Yard,*
June 1864.

SANITARY REPORT FOR 1862.

THE HOME QUARTERS OF THE ARMY.

The advanced sanitary condition now attained at the camps and in most of the military districts of Great Britain, through the services of the Barrack and Hospital Improvement Commission, and which services have been made the subject of detailed reference in the Reports of the last two years, leaves very little for necessary comment in the review of this year.

The importance and value of the sanitary works so generally executed in course of the last few years for the improvement of barracks and hospitals at the Home Stations, as regards the applied new system of ventilation more particularly, have become gradually expressed in the periodical statistics of the health and reduced mortality of the army. Much, however, remains to be effected in this direction, throughout certain districts of Ireland more especially, and which the pecuniary grants in the Annual Sanitary Votes have not yet admitted of, but caused to be deferred for further Parliamentary sanction of ways and means from year to year.

The Camp and District Sanitary Reports represent the general hygienic conditions in the military establishments of Great Britain very much as they were shown to be at the close of the preceding year, as regards huts, permanent barracks and the hospitals; of the latter, two of the new model regimental ones, at York and Hounslow respectively, were completed for occupation, affording every sanitary condition advanced to the science of the day, and inaugurating the new standard of 1200 cubic feet per bed.

The average strength of the army in Great Britain, as distributed in quarters throughout the country, varied so unimportantly from the numbers of the preceding year as to have little affected the rates of cubic accommodation in the camp huts or permanent barracks, and such as were shown in thef corresponding Reports, rates ranging, according to strength in occupation, rom the ample space occasionally of 1000 feet per man, as in the new barracks of Aldershot, to the 450 cubic feet of former regulation, and here and there even under that in some of the older barracks; 600 cubic feet per man being realized under all circumstances in recent constructions for barrack-rooms. Deficient cubic accommodation, however, is not shown, anywhere, this year to have acted prejudicially to health amongst the men; immunity from preventible disease has likewise been secured by the sanitary attention paid by the Medical Officers whose responsible duties of surveillance over all circumstances influencing the hygiene of their regiments and corps have been systematically exercised.

Whilst it is unnecessary here to dilate upon the progress towards completion in the barracks and hospitals in Great Britain, generally, of the artificial system of ventilation in connection with warming by the new and remodelled grates, of the introduction of gas in substitution for the old tallow candle, the extension of bath and ablution accommodation, improved means for varied cooking, remodelling of latrines and urinals, &c., and of the abolition of the cesspit system, reference may be made to such works and sanitary improvements during this year as have had more specially local application, and have been referred to in the reports of Medical Officers.

At *Walmer Barracks*, where a series of old cesspits existed, and the drains were shallow and surface ones, Staff Surgeon-Major Mackinnon reports that much improvement has been effected. For flushing purposes two tanks are now provided, one for the south barracks, the other for the north, each capable of containing 10,000 gallons, an ample supply for two days' service. Water is now laid on constantly to closets and to the men's latrines, the ablution houses, kitchens, &c.; these are now connected with new drains, to which water can be turned on, whilst the main drain itself can be flushed effectively from each man-hole, or inspection shaft, by lowering a valve shutter, so as to collect a powerful head of water and then, by raising the shutter, to admit of the main sewers being forcibly scoured by the pent-up water discharging itself eventually into the sea. The water supply to the barracks and hospital at Walmer is abundantly furnished from an artesian well at Upper Deal, and the better drainage now effected by the extensive works, with the abolition of the former cesspit system, will, no doubt, enhance the health of the troops in direct ratio to the vast improvement which has thus been effected for the site of the barracks.

At *Canterbury*, in February, fever of a low and typhoid form was reported as being prevalent among the troops. Enquiry was made as to its circumstances and probable cause, but no source of a positive nature, as within the area of the barrack enclosures, was discovered to be in any unusual operation; there was no overcrowding, the strength at the time being under the maximum of occupation, and the cases, twelve in all, occurred in various and distinct parts of the cavalry and infantry barracks, and were admitted from rooms irrespective of each other, save in one instance of the cavalry barracks, from which two cases were admitted, a probably casual coincidence; one case also took place in the hospital where the man had been some time an inmate on account of other disease, and had no communication with the fever cases, he being under treatment in quite a separate ward.

Epidemic influence, more general, could be better assigned as a cause for this outbreak, as the disease was, at the time, prevalent in the low laying and badly drained suburb of Northgate, immediately adjoining the barracks, and which is the customary resort of the men in their idle hours.

No time was lost, in connection with the epidemic, in resorting to sanitary measures by limewashing the barrack-rooms, kitchens, lavatories, urinals, and latrines. As the cesspit system was still in existence, together with the defective drainage of the whole barrack site, this opportunity was taken to urge greater expedition and active prosecution of the great sanitary work on hand, that of a main drainage and sewerage to be flushed into the river by water power from a reservoir of higher level in the neighbourhood.

At *Woolwich* important sanitary advances were made. Extensive sub-soil drainage works were carried on at the hut encampment, which are suited to obviate the serious and many drawbacks hitherto of this site, as experienced by the battalions of the Military Train occupying the huts. A further and very wholesale sanitary reform within the old garrison hospital became effected under the superintendence of Dr. Rutherford, Deputy Inspector-General, whose efforts were directed to arrangements which were successful in creating a great diminution in the number of occupants. It has followed that each patient has latterly been afforded about 1000 cubic feet of air space, and, in some instances, considerably more. As a further advantage the hospitals of both of the battalions of the Military Train, the sick of which had hitherto been insufficiently accommodated in ordinary huts in camp on the Common, were incorporated with the general hospital in September, a measure attended with considerable economy, as well as contributing materially to a more satisfactory medical administration. The above relief to the garrison hospital was, in great proportion, effected by appropriating the neighbouring new building (intended to be auxiliary to the future Herbert Hospital) for the meanwhile purpose of occupation by convalescent cases, and for which end forty beds were disposable; this auxiliary establishment Dr. Rutherford reports to be well built, well situated, admirably adapted, and, in fact, that it contributed much to the comfort and speedy recovery of the men sent to it.

An appropriate hospital for the sick wives and children of the garrison has been in process of construction on a well-selected and very convenient site. Meanwhile, through private benevolence, a house in the town had been hired to serve as an infirmary for them.

Colchester.—The sub-soil drainage of the camp was completed about the beginning of this year, the system carried out being by four parallels of terra cotta tubes, nine and twelve inches in diameter, laid down between the respective ranges of barrack huts, including the hospital range; the whole conducting into a main of 2½ feet in diameter, which crosses the parallel drains at right angles from north to south, and leads to the town sewerage, flowing into the river Colne. Dr. John Fraser, C.B., the Deputy Inspector-General, suggests the completing of the entire drainage by placing gutters between all the huts to communicate with the above parallel drains, and which gutters, with suitable gradients, would obviate the sloppiness of ground after rain, often very inconvenient in localities where no slope exists from the borders of the huts. As at all the camps a more effective lighting of the men's huts is advocated, and here the defect in this respect is thrown into greater contrast by the cheerfulness of the well-organized canteen.

IRELAND.

The Dublin Division.—No particular causes have been mentioned by the Medical Officers as having been active in the production of disease in course of this year, although hygienic progress has not yet been advanced generally at the military stations comprising this division, or indeed in Ireland as a whole, in the ratio such services have been now effected in the barracks and hospitals of Great Britain, with reference to the artificial system of ventilation and combined warming introduced by the Barrack and Hospital Improvement Commission, and in the other tributaries to health through augmented bath and lavatory accommodation, greater facilities for varied cooking, &c. As being most behind-hand in such conditions the following Stations in his district are cited by Mr. O'Flaherty, the Deputy Inspector-General of Hospitals of the Dublin Division, Dundalk, Newry, Enniskillen, and Athlone; and it so happened, he observes, that in these the greatest amount of crowding was experienced, fortunately without any marked sinister result this year.

The Cork or Southern Division.—The hospitals at Cork and Queenstown only have, as yet, been organized with the new system of artificial ventilation. Gas had been introduced into the Cork barracks, and a like boon was anticipated for all others in the district. The quality of the ration-beef supplied to the troops throughout the district, on the contract plan, is commented on by the Deputy Inspector-General of Hospitals, Mr. Ker Innes, C.B., as being of a very inferior quality to that provided at the Curragh and other Stations under the Commissariat administration. Whilst the barracks and hospitals throughout the District Command are reported to possess means of ordinary ablution, none of the ablution-rooms are yet furnished with baths, and the Stations are few where open-air bathing can be taken advantage of.

A few general remarks on certain points of the military hygiene may follow on this, the Home section of Report.

Recreations.—Whilst improved ventilation and other sanitary accessories to the barracks and hospitals of the Home Stations are now contributing to the physical welfare of the army, the Government has not failed to advance the moral interests of the troops; recreation and refreshment-rooms in barracks are to be instituted, and the supply of suitable libraries and means towards the educational improvement of the men have been gradually extending in their operation.

Trades.—A wise policy has been considered in the inauguration of trades to be practised by the soldiers as occupation for their leisure hours, a system which may be extended to the training of their children also to useful and skilful avocations. This new policy of military administration must redound abundantly to the weal of the soldier and the substantive interest of the State.

The Director-General having been requested by the President of a Committee of Officers, appointed by the Minister for War to inquire into the subject of employing and instructing soldiers in trades, to afford such observations as he might be disposed to make on the sanitary bearing of the question, Dr. Gibson, C.B., expressed his opinion that the object was a most desirable one and, in its general principle, would prove very satisfactory as a means of adding to the hygienic interests of the army. He submitted the following suggestions for the consideration of the committee.

1st. To organize a system which would comprise such occupations as those of the tailor, shoemaker, carpenter, joiner, mason, smith, and any such of skilled character as could be systematically applied to the self-interests of the troops as regards their clothing, appointments, and the practical execution of all repairs of their barracks and hospital buildings.

2nd. For all in-door trades suitable shop accommodation should be provided and arranged upon scales of sufficient cubic space, effective ventilation, good light, and adequate warming.

3rd. At the in-door trades, and particularly the more sedentary, the daily hours should be limited approximately to four for the men, and from two to three for the soldiers' children, who may be brought under instruction, according to age.

4th. The Principal Medical Officer of a Station should have sanitary supervision over the progressive working of the system, and make weekly inspections of the classes. He should also obtain periodical returns of sick among the respective trades from the regimental Medical Officers, to enable him to prepare Statistical and Sanitary Reports on the system and for the purpose of submitting such to the authorities at the termination of each half-year.

5th. That these institutions, for experimental purpose, should first be organized at the camps of Aldershot, Shorncliffe, and the Curragh—if convenient to the arrangements of Government.

6th. All soldiers under instruction or employment at the trades should take their rotation of guards, so as not to entail additional night-duties on their comrades.

Exercises.—Progress has been made in the systematic administration for the gymnastic training of the soldier, and, with the intended construction of gymnasia at all the important and considerable military Stations, the physical force of the army may well be relied upon to prove of enhanced agency on service through this now established system, whilst it may be anticipated that financial burden upon the public will be lightened through reduction in the amount of early invaliding of men whose undeveloped stamina might, otherwise, prove unequal to resist diseases incidental to the demands of the service upon them.

The gymnasium set in operation this year at St. John's Wood Barracks, wherein the exercises have been more especially tested among the recruits and young soldiers of the Guards, is so favourably reported upon by Mr. Bostock, Surgeon-Major of the Scots Fusilier Guards, that his statement with reference to the companies of his regiment, may be given in full—with its tabular indications.

"Regular exercises, according to a plan approved of by the Horse Guards, have been practised. One company from each battalion at the west end of London is relieved from all duty, and occupies the St. John's Wood Barracks for this purpose. The course of instruction lasts four weeks, when fresh companies replace those who have completed the exercise. It is intended, I believe, to continue this system as long as the public duties are not interfered with, and the men have four and a half nights in bed. As far as the limited experience enables me to form an opinion, the best results have followed the practise. No case of sickness has been reported since the commencement, on the 28th of October, and three cases only of slight accidents have been admitted into hospital. The physical condition of the men has improved in a remarkable manner, as is shown by the accompanying Return. The only men exempted are those affected with rupture.

Return showing the measurement and increase of three companies of the Scots Fusilier Guards, who have completed their course of gymnastics at St. John's Wood.

Co.	Date of each Measurement.		Height.		Weight.			Chest.	Fore Arm.	Upper Arm.	Age.	
			Ft.	In.	St.	lbs.	ozs.	Inches.	Inches.	Inches.	Yrs.	Mth.
R. F.	1st	28th Oct., 1862	6	0·77	12	2	0	37·21	10·98	12·26	24	8
	2nd	24th Nov., "	..		12	5	10·61	38·23	11·42	12·76	24	9
		Increase ..	..			3	10·61	1·02	0·44	0·53		
1st	1st	25th Nov., 1862	5	10·9	11	0	9·5	36·25	10·75	12	24	6
	2nd	24th Dec., "	..		11	4	7·5	37·375	11	12·375	24	7
		Increase ..	..			3	14	1·125	·25	·375		
2nd	1st	26th Dec., 1862	5	9	10	11	3	35·625	10·875	11·875	26	7
	2nd	23rd Jan., 1863	..		11	1	7	36·5	11·25	12·375	26	8
		Increase ..	..			4	4	·875	·375	·5		

Clothing.—A few references on this subject may be submitted briefly.

The new infantry chaco, in its lightness of cloth material, is experienced to be a vast improvement on the old heavy one of coarse felt. A loose serge jacket, served out to the Military Train, is reported to have proved very serviceable and well-adapted for the men of this branch, for whom it has been established in lieu of lining to the ordinary tunic; its adaptation for the cavalry, generally, would appear to be a desirable object, many of the Medical Officers of this arm of the service representing the hitherto great want of a "strapping" jacket to obviate the risks to health these men often undergo, when overheated at their stable duties.

An important boon has been provided for the welfare and comfort of troops embarked, that of putting on board a supply of waterproof clothing, overcoats and caps, for one-third of the numbers, the proportion required to remain always on deck for sanitary reasons, thus affording them protection from storms and from the deluging rains of the equatorial latitudes.

The more general use of flannel, as an under-vesture for the soldier, continues to be an annual theme of most Medical Officers. For the viscissitudes of the service it would be a desired end if some light flannel fabric could be afforded for the use of all men who might be induced to wear this underclothing, a necessary absorbent for the profuse perspirations they undergo in the tropics, and a defence against the sudden and chilling influences their proverbial heedlessness exposes them to wheresoever they be.

Diet and Cooking.—No change has taken place in the quantitative constituents of the soldiers' daily ration on the Home Service. The insufficiency of the meat portion, the three-fourths of a pound, is the fixed expression of opinion by the Medical Officers, in so far leaving the question a purely administrative one. It is represented as frequently happening that, when the messes come to be divided after cooking, a man may obtain positively only about a third of a pound on account of bone, and, when it is remembered that his breakfast customarily consists of a mere pint of certainly not over-strong coffee, with half a pound of bread, it must be acknowledged that the regulation bill of fare is not an adequate one to the appetite of a growing recruit, or soldier of any age called upon to perform the general duties of daily drill, active field days at the camps of instruction, and to meet, under a long fast, the night duties of garrison and regimental guards. A late evening and early morning cup of good coffee should be a provision for all men who have to perform night sentries.

Wherever the services of the Commissariat Department have been given to the provision supplies, the results have been the most satisfactory, substantially and pecuniarily, to the soldiers—an interest which is said to attach many of them, in preference, even to the more monotonous life and frequent duties at the camp of Aldershot, where they possess in its highest degree the advantage in question.

A new institution of trained cooks is now undergoing organization. The training has been some time in process and, when this new and important organization shall have become perfected and generally applied, another cardinal sanitary benefit will result to the service.

THE FOREIGN STATIONS OF THE ARMY.

GIBRALTAR.

Pending the issue of the Report by the Barrack and Hospital Improvement Commissioners, who so thoroughly investigated the entire condition of the military accommodation of this Garrison, it would, on the present occasion, become a course of supererogation to reiterate the many great, universally spread, and long existent sanitary defects and arrears of this large and compacted fortress.

Up to the closing date of the Principal Medical Officer's Annual Report, the extensive sanitary reformation anticipated from the Commissioners' recommendations awaited undertaking, and Mr. Paynter, the Deputy Inspector-General of Hospitals, had only to emphasize again on the range of drawbacks still existing in the hygienic interests of the troops, rendering thus his Report for 1862 very much a reflex of that for the preceding annual period, the salient points of which were set forth categorically in the Department volume of the year. He represents, however, that two new barracks had been partly finished and partially occupied in course of the year. These comprised certain new stone huts at Buena Vista, and a detachment barrack at Catalan Bay,—the latter a post outside the garrison, and situated on the eastern aspect of the "rock."

The barracks generally throughout the garrison remained, as heretofore, much overcrowded, and, with very few exceptions, unfurnished with fire-places, the latter being a condition much dwelt on by Mr. Paynter, who, with the Medical Officers generally, holds to the climatic necessity for means of warmth by fires during the winter months.

Special and distinct barrack accommodation for the married soldiers demanded the earliest provision convenient, improved ventilation of barracks throughout was urgently called for, warmth in the rooms in winter greatly so, and more especially in those of bomb-proof construction; adequate bath and ablution means, improvement of the present primitive kitchen appliances, remodelling of latrines and urinals and of the entire system of drainage and sewerage, were especially of paramount necessity. When such services shall have been executed, the insanitary condition and impure atmosphere of Gibraltar Garrison, as Mr. Paynter observes, will have to a very great extent ceased.

Dr. Combe, Surgeon of the Royal Artillery, reporting upon the like circumstances, alludes to the naturally unexceptionable climate, and remarks that its artificial deterioration in local respect, as caused by the bad structural arrangements of barracks, streets, and residences of the civil population, could scarcely be greater. Referring to malarious influences from such insanitary conditions, rendering certain barracks more conspicuously unhealthy, he points more particularly to one occupied by men of his corps as being of especial impurity, "Jumper's Battery," a casemated structure; and he represents that when the rooms here are empty even, any one unaccustomed to breathe foul air, standing for a little near the entrances, becomes aware of a sense of feverish uneasiness.

The Deputy Inspector-General looked forward to the reconstruction of the Garrison Hospital, with its arrangements into those of a General one, and he anticipated from the conversion good results and advantages to the Service.

Whilst prevalent causes, as aforestated, were so suited to engender zymotic disease among the troops, and their good fortune in escaping any generally noxious results from those causes was to be congratulated, another agency—that of intemperance—appears as fully as ever to have maintained its alliance with the soldier's monotonous existence in a garrison where spacious and comfortable barrack accommodation is yet wanting, and refreshment and recreation rooms, together with other means of moral and physical amusement, are not yet within his resource. Mr. Paynter expresses himself strongly impressed with the conviction, one concurred in by the Regimental Medical Officers, that drunkenness had been a very common cause of disease, and he attributed a great proportion of the hospital admissions to intemperance directly or indirectly, believing it to have been the source of two-thirds of the diseases, injuries, &c., which came under treatment.

During the year the duties of the garrison exercised no unfavourable influences on the health of the troops, and the night duties devolving on the men were at no season over frequent.

The Commissariat supplies were very satisfactory, and the new light summer clothing proved a great comfort and advantage over the hitherto use of heavy cloth uniform tunics, ever oppressive during the summer and autumn months on garrison day duties.

The Principal Medical Officer has referred to the circumstance of cases of syphilis having been as nearly as possible one-half less prevalent than the numbers thereof which occurred in 1861, although those of allied character were somewhat in advance of the numbers of that year. The results in the former instance may possibly bespeak a more effective police administration, *pro hâc vice*, than hitherto carried out in this Garrison.

MALTA.

Awaiting the issue of the Report by the Barrack and Hospital Improvement Commissioners, who had investigated the sanitary conditions of all the military establishments of the island, Inspector-General Dr. Hume refrained from making any recommendations further than he deemed absolutely necessary, and immediately so, for preserving the health of the troops. Through his efforts, however, one very great boon to the married class was obtained this year. In a yet distant prospect of the completion of a special female hospital for the garrison, Dr. Hume took the opportunity to recommend to the local military authorities that an existing large mess hut, with two smaller ones adjoining it, situated in the "Crown Work" at Florian, should be utilized for the meanwhile purpose; his suggestion was approved of and, in October, these huts were so arranged as to afford very tolerable accommodation for 14 patients; very little extra expense was incurred by the conversion whilst, on the other hand, much comfort to the sick and means for their more careful treatment and nursing were obtained.

Gas, which had been introduced to the barracks of St. Elmo, was extended this year to those of Florian and of the Royal Engineers at St. Francis, and the service will, no doubt, be in due course carried out to the several others, to supersede entirely the use of the old oil lamp.

The improvements in the garrison hospital of Valetta, referred to in last year's Report, are represented to have been as beneficial as they were much needed in this establishment.

In referring to the high standard of health among the troops, this year, allusions are made in the Reports to the new light summer clothing now supplied to the men, it has undoubtedly contributed much to that happy result, and at no station, perhaps, has its introduction been a greater boon for the soldier's comfort and welfare.

At the Sanatarium of Citta Vecchia a library has been established with advantage, and it was anticipated that a reading room would also be provided. It was contemplated to rent an adjoining ditch of the fortifications for the purposes of a ball alley and skittle ground for the convalescents, and these accessories will be productive of good results.

The new station of Pembroke Camp is again much praised for the advantages of its position, an elevated site and isolated. Here many weakly men have found a sanatarium surpassing that of Citta Vecchia, and all engaged at the rifle practice improve in health during their course, as they spend so much time in the open air by the coast, without restriction as to dress, and away from temptations of garrison vice.

High as the standard of health has been among the troops during the year, opthalmia yet continued a plague spot in the sanitary records of the garrison, and it infested certain battalions more virulently. Much of its odium is assigned to hitherto defective barrack structures, and limited cubic accommodation for the men occupying them; but a very special cause of its prevalence is attributed, by the Inspector-General and the Medical Officers, to the generally insufficient water supply, and to the distant and inconvenient position of many of the lavatories with relation to their respective barracks.

In the instance of the battalion occupying Fort Ricasoli this latter evil was great, and attempts were made to obviate it in some measure by the expedient of placing large barrels of water in the passages or localities adjoining the men's rooms, at best a very make-shift arrangement. Dr. Hume, on his joining the Command, represented to the military authorities the great deficit of ablution means in this fort (Ricasoli), and the result was the erection of a small lavatory in vicinity of the rooms most distant from the original ablution house and, at the same time, laying down pipes for the purpose of affording a direct supply to it.

Strenuous efforts were made by frequent and minute inspections to eradicate the prevailing ophthalmia, and a measure was resorted to by which 155 men of the corps most afflicted were selected and sent to Gozo (the neighbouring island) in September for isolation and change, and the result proved so far favourable. A second measure of the kind was projected for the cases of another battalion later in the season but, owing to difficulty of communication with Gozo in winter, the intention was abandoned and the cases (45) were consequently transferred to the sanatarium of Citta Vecchia.

It is cited, as a sanitary advantage derived from the constituted municipal power, that the great bane of venereal has been singularly reduced and held in check by the efficacy of police law, the regulations of which have enforced great vigilance to this end. The results to the troops in garrison are expressed in figures for this year as a total of only 309 admissions of the class, compared with 651 of the previous annual period, a reduction of more than one half.

IONIAN ISLANDS.

Of a strength of about 4,000 men, in garrison of these Islands for the year 1862, the following rates resulted :—

Admissions to Hospital	769 per 1,000
Deaths from Disease	4·98 ,,
Average number of Daily Sick	32·67 ,,

These rates, the Principal Medical Officer, Dr. Francis Innes, C.B., observes, are lower than those for any one of the preceding 45 years during which the Islands have been held by British troops, and far lower than those prevailing, at army ages, in the healthiest districts of England.

The decrease of sickness and mortality in this Command has, of late years, been very marked and, Dr. Innes submits, may be fairly attributed to improved sanitary jurisdiction, although the full benefit derivable from this source has not yet been reaped—an observation in relation to which he cites the fact that the two battalions which occupied Fort Neuf (the most insanitarily placed of all the military quarters of Corfu), although as well housed, clothed, fed, and in every way cared for as any others in that garrison, yet had their rates of admissions and deaths from fevers respectively 259 and 4·19 per 1,000 men, while, from the corps quartered in the Citadel, the numbers were 101 and 1·8 per 1,000,—a vast difference, and one not accidental, merely, but attributable to disease eminently preventible; and, it is remarked, the wonder becomes that the aggregate of the military classes possessed such good health in the clos neighbourhood of the civil population of the town of Corfu, the very insanitary portrait of which is graphically drawn by Dr. Innes in the following words: —"Broken drains, open gutters, narrow and filthy streets, houses five or six stories high, most of them without water-closets or even water—all circumstances combining to impurify the atmosphere and engender and aggravate disease." How fortunate the set-off thereto in a climate nearly one of perfection! and which, from the end of September to the middle of May, is both agreeable to the feelings and most congenial to health, although in summer and autumn months the heat is comparatively great and at times oppressive, in the latter respect to a degree beyond the thermometrical indication. Under these last conditions, with certain of the physical features of the island in its country districts, and, in reference to the town of Corfu, a very generally open violation of sanitary laws, paroxysmal fevers prevail in the former, and typhoid in the latter: the second type occasionally demonstrating its influence amongst the military as well as the civil communities, but, as before referred to, in a ratio duly that of the insanitary relations of the respective barracks.

Dr. Innes, in further reporting this year upon the barrack and hospital accommodation, transmits the following remarks:—

"The barracks occupied by the troops in Corfu are situated in immediate proximity to the sea, at heights varying from 30 to 180 feet. They vary so much in size, shape, position, means of ventilation, &c., that 300 cubic feet in one room may give as much pure air for breathing as 600 in another. Several rooms are so broad, in proportion to their length, that full advantage cannot be taken of their cubic space without placing beds in their centres,—an arrangement so inconvenient that it has never been attempted. These considerations have all been taken into account in arranging the barrack occupation. The permanent public buildings occupied by troops in Corfu are all built of brick, and would afford the regulated allowance of 600 cubic feet for 2,000 men, which was the average strength of the garrison till 1859, when it was increased to 3,000. Then overcrowding became inevitable, though all sorts of temporary expedients were resorted to to mitigate the evil. Houses were hired in town, and brick huts built at Vido for married soldiers, old Crimean huts were re-erected, and tents pitched when the season permitted their use. By these means the troops in the Citadel last year obtained an average of from 400 to 500 cubic feet, those in Fort Neuf from 384 to 580, and in Vido 600 cubic feet of bomb-proof space, in which latter, however, ventilation has been sacrificed to the requirements of defence to an extent so great that it is only by frequent reliefs that the health of this garrison (Vido) is preserved. Considerable progress has been made in the erection of a new barrack on the most easterly point of the Citadel Rock, and of two blocks to contain quarters for forty married soldiers; but these works have been interrupted by the proposed cession of these islands to Greece.

"*General Hospital.*—The sick of the garrison of Corfu and Vido were all accommodated in the Consolidated Hospital, a two-storied building beautifully situated on the crest of the Citadel Rock, 120 feet above the sea-level. There are, in the

"Main building, 16 wards, containing at 975 cubic feet per bed	160 beds
West Wing, 3 small wards containing at 1,044 cubic feet per bed	8 "
Old Medical Officers' Quarters, 4 wards containing at 1382 cubic feet per bed	22 "
	190

"This is a small amount of hospital accommodation for a force the average strength of which was 2,933, and, although adequate during this year, it would be found insufficient during any epidemic—a contingency that ought always to be provided for, as then overcrowding becomes doubly hazardous.

"The several garrisons of the Southern Islands were all provided with adequate accommodation in buildings belonging to, or hired by, the State. These generally afforded the regulated space to each of their inmates, and defects of construction were more than compensated by the open elevated sites and small numbers of men at any one station.

"Throughout the Command all barracks and hospitals were well kept within and without, so far as this depended on the military authorities; but, in several instances, they are powerless to remove or abate the most destructive nuisances.

"*Military Prison, Vido.*—Much inconvenience has been experienced from the inadequacy of the accommodation in the Military Prison at Vido. As many as 82 prisoners have been confined in a space barely suitable for 55, and it has, on several occasions, been necessary to discharge a considerable number of prisoners before the expiration of their sentences to make room for fresh admissions. The space per man in the associated cells has been (exclusive of corridors) from 343 to 385 cubic feet, and this space is imperfectly ventilated by loopholes opening into a dry ditch, and by shafts, 1 foot square, which open in an angle of the roof, and pass through 15 feet of earth and masonry before reaching the outer air in the prison-yard. By this arrangement the air, in at least one-third of the cell-space, is quite stagnant. The solitary cells are so badly ventilated that their inmates are subject to diarrhœa. This evil was obviated in two cells by substituting, for a fixed window-blind of sheet-iron, a window-sash of ground-glass moving on hinges. This contrivance has completely answered its purpose, obstructing the view but admitting the air; and it is intended to introduce it in all the solitary cells. In consequence of an outbreak of diarrhœa last autumn, it was arranged that, when the prisoners exceeded 70, all over that number should sleep in the chapel.

"The following are the sanitary improvements effected since last Report:—

"*General Hospital, Corfu.*—1. Additional space for 22 beds was obtained by converting the Medical Officers' quarters into wards.

"2. A detached dead-house was erected in lieu of that in the basement of the hospital, which has been converted into a quarter for the hospital steward.

"3. An excellent ablution-room, with Jennings' fittings, and a well-finished bath-room have been completed.

"4. Open fire-places, with hot air and ventilating shafts, have been introduced into all the larger wards, but the grates for these have not yet been received from England.

"5. Semi-detached water-closets, with Jennings' fittings, also sinks, have been erected at each end of the corridor.

"6. On the upper storey and on the basement doors have been opened at the ends for thorough ventilation.

"7. Jennings' flushing apparatus has been provided for the latrine and urinals, which are now quite inodorous.

"8. A rubbish cart, emptied daily, has been substituted for ash pits.

"*Citadel Barracks.*—1. Additional space has been obtained by hiring houses in town for married soldiers.

"2. A separate bath and ablution room, completely equipped, has been allotted to the Royal Engineers.

"3. The ventilation of some of the rooms occupied by the Royal Artillery in the old Venetian Barrack has been much improved by substituting open balustrades for lath and plaster in the main staircase, and iron rails for a dead wall opposite certain windows on the ground floor.

"4. Some improvement has been effected in the Main Guard Lock-up as regards ventilation, but the access of fresh air and light to it is still very insufficient.

"5. Improved arrangements have been made for keeping the old Venetian latrine in good order; but the long-promised apparatus (Jennings') is still a desideratum in the Venetian Barracks.

"*Fort Neuf.*—Additional cubic space was obtained by detaching men to Santa Maura and Ithaca, and, in summer, by the use of tents. Rubbish carts have been substituted for ash-pits, and arrangements made for the immediate removal of all sea-weed, &c., which may be cast up under the fort walls.

"*Vido.*—Rubbish carts and a new wash-house have been taken into use.

"*Fort Abraham.*—A Macfarlane's water latrine, and a well furnished bath and ablution room have been completed.

"Cephalonia.—A new barrack has been built on an elevated and, in all respects, eligible site near the town of Lixuri, it will afford good accommodation for the detachment quartered at that outpost. The house which has hitherto been hired as an hospital for this detachment is in all respects unsuited for the reception of sick, and is to be given up.

"Zante.—The better ventilation of the town prison guard-room has been provided for, and a latrine has been built for the men on duty there. The ablution room and barrack guard-room in the town have been improved.

"Ithaca.—A new ablution room has been erected in barracks, and a much better house has been hired for an hospital.

"Santa Maura.—The officer commanding this detachment has given over portions of waste ground within the fort to certain of his men, who are successfully cultivating potatoes and other common vegetables.

Sanitary Works in Progress.

"The Lord High Commissioner lately addressed the President and Senate of the Ionian Islands urging that immediate steps be taken for the improvement of the drainage, also for other sanitary arrangements, and recommending that the existing drains be repaired and prolonged into deeper water by means of tubes. Measures are being taken to carry these suggestions into effect.

"The erection of quarters for married soldiers at Corfu is progressing but slowly."

Of the ration supplies this year, an inferior quality of bread was at one period furnished. Samples of the flour were sent to England for analysis and were pronounced by Dr. Parkes, Professor of Hygiene at the Army Medical School, to be of bad quality, made from imperfectly ripened grain, and containing a proportion of bran so large as probably to cause bowel complaints.

NOVA SCOTIA.

Within the first quarter of the year there had existed a force in this Command, stationary and expeditionary, of 11,319 men, of whom 6,544 were passed on to Canada by route of St. John's and Woodstock, New Brunswick. To meet the immediate pressure of the reinforcements from England at the beginning of the year—private buildings were engaged—but, as the necessity for their occupation speedily passed away, they were relinquished, and an intention to construct certain hut barracks in addition to the permanent military buildings at Halifax was abandoned as the polemical threatenings of the time ceased.

Mr. McIlree, the Deputy Inspector-General of Hospitals, announces, with reference to the permanent barracks and hospitals, that several improvements of sanitary character were accomplished in course of the year, better ventilation was effected in some, and means of personal cleanliness for the troops generally were extended. He refers to the old garrison hospital at Halifax having been much improved in its drainage and internal accommodation, although, in the latter respect, it is not to be expected it can be brought up to the sanitary standard of the present day, to which none of the buildings in the Command, he observes, save the new Wellington Barracks, have any approach, and the Casemate Barracks of the citadel (Halifax) must remain open to the objections attaching to their original construction. Fortunately, however, in these respects sanitary inferiorities are counterbalanced by salubrity of the climate, the winter of which produces no malarious influences, whilst the troops are scattered to rifle practice during summer, and thereby create ample cubic room to those who remain in occupation of barracks.

With reference to the influx of the expeditionary force at the commencement of the year, Mr. McIlree represents that the troops already occupying Nova Scotia and New Brunswick were, on the arrival of the former, despatched onward to Canada. The new arrivals, emergently sent out from England, were, he states, found admirably equipped in every respect for the preservation of their health, but, nevertheless, were necessarily liable, in landing at a winter season, to causes of disease arising from exposure on unavoidable fatigue duties, &c., and, in being numerously composed of young soldiers having no experience of the climate, were in so far ignorant and characteristically indifferent to the necessity of using more than ordinary care for their own protection, the consequences being, in many instances, that they encountered illness which could be attributed to their own imprudence. Such circumstances, together with unlimited facilities of procuring cheap and bad liquor, and coupled with the excitement always predominant among troops on like occasions, tended to increase the sick and mortality lists in comparative proportions over those of the ordinary circumstances of the Command; several fatal cases were set down, directly or indirectly, to intemperance, whilst, in other fatal instances, the casualties might not have happened had the men used the means afforded them for their own protection.

Apart from the foregoing considerations bearing on the health of the troops at the early period, Mr. McIlree adverts to another and casual influence, further in course of the year, which was assumed to affect in some degree the public health at Halifax but, fortunately for the troops, not at a time when the garrison was overcrowded. He alludes to the circumstance, so unusual in this country, of the occurrence of an epidemic fever—the origin of which, he thinks, could not be attributed to any existing climatic causes at the time—for, although instances of low fever have been from time to time met with among the poor, they could be pronounced to depend mainly on local sanitary defects around their dwellings; he was informed that no diseases of this character had ever been so epidemic as this of 1862, and he regrets an inability to convey any just estimate of the proportion of sickness and deaths amongst the civil population, owing to there being no organised public registry. Importation was the cause in the opinion of some, and through the arrival of two or three of Her Majesty's ships of war from the West Indies with yellow fever on board; but a more general opinion assigned the origin of the outbreak to purely local causes. In reference thereto it is represented that the streets and roads in and about Halifax had been laid open to a great extent for the purpose of laying down new piping for the conveyance of an increased supply of water to the town from the neighbouring lakes. This work necessarily exposed a great surface of newly turned-up soil to the action of the sun and atmosphere at a time of hot and sultry weather and in this way, it was believed, produced prejudicial influences to health, an uncertain and deficient supply of water during the new piping process possibly contributing to the evil. The work was, of course, an impracticable one during winter on account of the frozen state of the earth.

From the General Sanitary Report, the welfare of the troops in this Command must be said to have met with every careful consideration, and very especially under the exceptional circumstance of the temporary large augmentation of force congregated; the effective medical superintendence and the efforts of the military authorities in co-operation towards sanitary ends were equally conspicuous.

The Principal Medical Officer had most earnestly repeated his recommendations, as contained in his previous Annual Reports, for the establishment under Government provision, and throughout the Command, of such means of amusements as would tend, in his opinion, to wean the men from the sources of pernicious vices by which they are said to be surrounded at all the stations, ending in many palpable instances of degradation and moral ruin.

The formation of soldiers' institutes at the larger garrisons was advocated by him as means surely tending to promote largely in this Command an object of paramount philanthropy in elevating the moràle of the soldier.

So entirely did the Major-General Commanding agree in Mr. McIlree's views that he had endeavoured to establish a Soldiers' Institute in the garrison of Halifax whilst one, of the nature of a club for the men, had been brought into operation as being much required to relieve their tedium of winter life at St. John's, New Brunswick. Each instance is reported to have had admirable success in benefit to the soldiers. A willingness of spirit is nowhere wanting for progress in this right direction, one so worthy of Government aid and encouragement.

Amongst the contributed papers to the Sanitary section of this year's Departmental volume is included a narrative, by Mr. McIlree, of the landing and onward career of the moveable force towards Canada, and also a description, in synoptical form, of all buildings which had been in use in course of the year for barrack and hospital purposes, this latter affording a useful *précis* for ready reference on sanitary points at all the stations of the Nova Scotia Command.

CANADA.

The Inspector-General of Hospitals, Dr. Muir, C.B., in his Sanitary Report to the end of the year, states that the forces throughout the Command had been well housed, fed, and clothed; and that there was nothing in the nature or amount of their duties which acted injuriously on their health.

An excellent review of the permanent barrack and hospital accommodation, and of that which had been subsidized to meet the requirements of the period, is given in the Inspector-General's Report which can only be done justice to by rendering it in its fulness amongst the contributed papers to this year's volume. It sets forth a topographical sketch of the Province of Canada, embracing its geological characteristics, its natural productions, the climatic conditions, the distribution of the augmented force, an interesting narrative of the famous overland winter route of the troops from Halifax, Nova Scotia, to Canada, with the sanitary care bestowed upon them *in transitû*, and, subsequently, a detail is given of the provision made in the established barrack and hospital accommodation for them, as well as in the private buildings extemporised for these purposes at the several stations of the Command, which came to be so largely reinforced and garrisoned. The route taken by the troops proceeding from St. John's, New Brunswick, to Canada, is admirably delineated in an accompanying chart by Lieutenant-Colonel Wolseley, A.Q.M.G., and illustrated by a series of descriptive notes.

The per-centage of sick to well for the year reached only about one-half of that which is usual on home stations, a result very confirmatory of the advantageous sanitary conditions secured for the troops.

The admissions to hospital are reported to have been caused chiefly by venereal and drunkenness, or the consequences of the latter. In reference to the former, and its prevalence at Quebec, Mr. Gilborne, Surgeon of the Royal Artillery stationed there, observes in his Report that the disease is found to be more prevalent during the summer months, a circumstance attributable to its importation by sailors on the opening of the navigation; and, as a measure towards prevention of its diffusion from this source, he proposes that the crews of vessels should be examined by the Health Officer before being allowed to land,—a good sanitary law, and one as well worthy of legislative authority as any in a code of quarantine.

The Inspector-General had strongly impressed on the notice of the authorities the necessity for the establishment of Lock Hospitals, and for the extension of Soldiers' Institutes to all the stations, together with more ample means of recreation, especially for the winter season; also that for this last purpose covered ball courts and skating rinks should be provided.

Could a question remain as to the policy of gymnastic training, and systematic practice of physical exercise in this way, for the effectiveness of the army, it might now well be settled by the adoption of a system of applied gymnastics in every corps, and so as to turn the latent physical force of every soldier to the good account of the service at large. Mr. Bowen, Surgeon of the 1st Battalion of the Rifle Brigade, stationed this year at Hamilton, Canada West, represents in his Report on the subject that all the men had passed through a course of these exercises twice or three times during the year, a special building having been available for the object. This was done, he states, in systematic manner and, in his opinion, conduced much to the health of the men and their muscular development, the latter being proved by careful measurements. Many of the soldiers became very proficient in the practice.

Amongst the several of Dr. Muir's important recommendations to the authorities was the very paramount one of improved lighting of the barrack rooms—a sanitary as much as a social question—for the means and allowances hitherto granted for lights have, in a general complaint throughout the Command, and in a climate where indoor comfort is so much called for, been represented as creating little effect other than that of instigating the men away from a gloom and cheerlessness, within the rooms, to gratify their social predilections out of barracks where the temptations of greater comfort attract, but with the drawback of moral evils in their train. Whilst light however, was deficient in the men's barrack rooms adequate warming of them had been secured for the winter season.

The Inspector-General represents that the regulated cubic space per man in barrack accommodation as well as in the hospitals, the bath and ablution rooms, the drainage, the means for varied cooking, and the other general sanitary arrangements, were all carefully attended to throughout the Command, and, wherever found deficient, were improved, extended, or made good whensoever suggestions to such effect were submitted to the military authorities.

In regard to the cooking appliances for the largely increased force, each battalion or battery had, with one exception only unsupplied, been furnished with a sufficient number of ovens, or an equivalent of American cooking stoves, to insure variety in the preparation of the dinners.

The provision of special accommodation for married soldiers and their families met with full consideration; and, under the circumstance of increased demand through the military reinforcements, much appears to have been accomplished to meet the necessities of most stations.

A very important health question was entertained in the suggestion of Dr. Muir to the military authorities as to whether the camping of the troops in the summer season might not be carried out to a greater extent, consistently with the garrison duties which fall to be performed.

Pointed allusion is made to the annually recurring deaths by drowning (14 during the year under review), these calling for grave consideration with a view to devising more efficient means of preventing such deplorable losses. With reference to this observation of the Inspector-General, Sir Fenwick Williams, Bart., K.C.B., the Lieutenant-General Commanding, has remarked that the subject had not failed to occupy his own attention and that he had issued a General Order again calling upon General Officers commanding districts, and officers commanding at the different stations, to give their earnest co-operation in issuing and enforcing such orders as might be calculated to lessen the number of these casualties. He observes, upon this subject of drowning, that, notwithstanding every precaution is taken which forethought can suggest and that a good surveillance can effect, a greater number of deaths than takes place from this cause elsewhere must be expected, from the fact of the rivers and water-courses of the country being very numerous, exceedingly rapid, and dangerous.

For a detail of the accommodation in the permanent barracks and hospitals, as well as in the private buildings rented and fitted to receive the large reinforcements of the Command this year, Dr. Muir's General Annual Report, which appears in its fulness amongst the contributed papers herewith published, will afford every interesting information on the subject, and show how much had been well arranged and expeditiously administered for the housing of the augmented force thrown into the Colony at so short a notice. The Inspector-General's Report is one of an almost everywhere success in accommodating the troops and providing for their sanitary comforts and welfare. In the garrison of Montreal, alone, excellent arrangements were effected which provided for an increased strength of three extra battalions and one of the Military Train. Of the foregoing, two were battalions of the Guards, for whom a large block of buildings, recently erected as warehouses, was hired and equipped, forming an establishment which, on the whole, was pronounced to compare favourably with any barracks occupied by these troops in the metropolis of England; and the results are well expressed by the Medical Officer in charge of the 1st Battalion of the Grenadier Guards, who states that 14 days were the average each patient was in hospital as compared with 19 days in 1861, and 20 in 1860; also that the admissions were 90 less than in England in 1861, the decrease being to a considerable extent in acute bronchitis.

BRITISH COLUMBIA.

There has been nothing very noteworthy to add to the topographical sketches, the conditions of climate, and the sanitary provisions for the small military force given in the Departmental Report for 1860.

The Medical Officer in charge of the detachment of Royal Engineers, and whose experience of the new Colony has extended over four years, affirms the climate to be one of the most salubrious ; and he reports the men to have continued especially free from zymotic disease during the above length of time of their residence.

During the year under review, however, small-pox appeared among the colonists, through imputed importation from San Francisco. This disease, also, had committed great ravages among the native Indians of Vancouver's Island and the north-west coast of British Columbia, but did not spread to the Fraser River district or to any vicinity of the troops.

On the sanitary welfare of the military this year, Staff Assistant-Surgeon Seddall's Report instances not a single drawback. The ample barrack and hospital accommodation (previously described) suited their wants and comfort admirably ; their clothing was adapted in all essentials to the climate and nature of their duties, which latter, in their variety and degree, were fraught with health ; the provisioning never failed of wholesome sufficiency and quality ; all practical expedients to recreate and enliven the leisure and winter-hours of the men were had recourse to, in resources of a reading-room, theatricals, &c., and a very thorough success appears to have crowned the efforts in this direction, so much so that the social economy evidenced a marked absence of any serious military misdemeanour or crime.

The strength of the Royal Engineers was 128 men and 6 officers. The average of sick in hospital was so low as 2·34 per cent. of the above strength of men, and one death is alone recorded—a case of dropsy.

The women and children of the detachment enjoyed health ; 23 births were registered in course of the year, and 2 deaths, of children.

BERMUDA.

The average military strength for this year was 1,275, of which the average number of daily sick in hospital was not more than 38.

Low as this ratio of sick comparatively is, however, it remained a matter of deep regret that, in degree really great, intemperance, the still rooted immorality of the troops on this station, contributed prominently as the source of diseases

In the regiment of the line especially, although only a slightly increased average of daily sick in the hospital occurred this year, the Surgeon states that there were more admissions on the whole which he attributed directly or indirectly to intemperance.

Dr. Mure, Surgeon-Major of the Command, in his General Report, represents that, of the 6 deaths in the hospitals, one alone was of the zymotic class ; and that, of 8 which took place out of hospital, no fewer than 3 were of men drowned through a state of intoxication, whilst one man was suffocated when in the same state. A suicide is added to the list,—a probable result of similar cause.

Again have the Principal Medical Officer's suggestions and representations been urged for the moral welfare of the troops ; amidst the listlessness of their life, at this station of extreme monotony and circumscribed interests, to provide as much varied means of mental and physical recreation within reach of the quarters as would alienate the men from the destructive influences of the lowest order of grog-shops, uncontrolled by any effective municipal police.

Although an increase of force had to be provided for in course of the year, no actual decrease of cubic space was incurred, and fortunately, as none was to spare generally in the barracks, in all of which a much extended accommodation in this respect is required in a climate virtually tropical for some six months of the year.

The above occasion and necessity were met by disposal of the surplus strength under canvas—a so-far convenient measure ; and, although this arrangement was in force to the end of the year, and a season more or less subject to boisterous weather, no prejudice appears to have resulted to the health of those encamped.

The services realised this year, under sanitary bearing, were in the opening of a new reading-room for the men, and the re-cultivation of a garden for them in adjacency to the Head Quarters' barracks at St. George's. This piece of public ground had for years lain fallow, through an apparent lapse of interest in it by successive corps; but, as the cultivation has again been encouraged, good must accrue, under proper superintendence and direction, to the health of the men, not only through salutary physical occupation to some, but in the advantage to all in vegetable produce—an element much desired on account of its greater or less scarcity at all seasons at this station.

An extended range of out-door games was still a want, generally, to fill up the idle hours of the day, and more particularly is another and a roofed skittle-alley alluded to for this purpose as the heat is, at seasons, much too great to expose the men to; otherwise, they have to be confined listlessly within barracks for long portions of the day. Another prominent sanitary want remained unremedied—one not difficult of redress it might be supposed,—the grant of a sufficiency of wood-fuel to render ovens, which had been already supplied, available for varied cooking. The question of coal as a substitute, it is alleged, created a delay through official references to and from authorities.

At a station of so limited and inferior barrack-accommodation, quarters for married soldiers are greatly needed, many of the apartments now occupied by this class being represented as little better than cellars; and it is reported that the families of the last arrivals of troops on the augmentation were not sent out from England on account of want of accommodation for them.

Some drainage improvements are referred to by the Principal Medical Officer, chiefly that of asphalting the channels,—a process seemingly suggested y the very porous character of ground.

THE JAMAICA COMMAND.

Jamaica.

The Principal Medical Officer, Deputy Inspector-General Mr. O'Flaherty reports that no overcrowding took place in any of the barracks during the year, the average strength for the term having been 703 of white troops and 826 of black; the average daily sick of the former 19 only, and of the latter 37·20.

The sickness and mortality of the year were not thought attributable to other causes than the ordinary prevailing ones of climate, to constitutional predispositions, or to results of carelessness and, too often, vicious habits among the soldiery.

Contrasting the constitution of the black soldier, as regards a liability to pulmonary disease on this station, as at others of his special service, Mr. O'Flaherty observes the proneness thereto in this class, and the great fatality of it among them. The symptoms are noted to be frequently obscure on admission of the men to hospital, proving, generally, of asthenic character, and rapidly tending to effusion in the cavities, the condition of the lung speedily and insidiously passing beyond remedy. He adds the following observation: "The black soldier, to outward view, is apparently strong and muscular, particularly when of the purely negro race; but, when sick and submitted to treatment, he has the least power of resisting or sustaining disease; and fatal cases of phthisis amongst this class of troops are seldom protracted to the very advanced stages so commonly observed amongst European soldiers."

Their hygienic condition in the Command is reported by Mr. O'Flaherty, as regards barrack accommodation, clothing, and general supervision, to be quite that of the European soldier, and, being on service in a climate natural to them, it might be expected that they would enjoy a ratio of health and low rate of mortality equivalent to the circumstances of the white soldier in his native climate, yet at no station of this Command occupied by the black troops has, he states, this result obtained.

The Deputy Inspector-General, however, in drawing a more particularly local comparison with the white troops at the hill-station of Newcastle, observes that the very trying ordeal the black soldier-recruit undergoes in his change from almost idleness and a semi-savage state of existence to the order, regularity, and continued exertion of learning the work required of him during the two first years of a soldier's life, is well sufficient to tell unfavourably in a contrast of the health-rate and mortality of the European corps as above cantoned. The white corps has no soldiers in the recruit stage, and the men join the station completely drilled, in robust health, suited fairly to the change of a climate which, more damp than may be agreeable, yet is little more so than their native one.

Further, in the comparison, the guards at Newcastle are few, the nights in bed for the troops numerous, the drills short and (there being no recruits) not necessarily frequent; little fatigue duty is called for beyond that of keeping the cantonment in order, and there appears to be a constant and salutary employment of numbers of the men upon public works,—a remunerative occupation for them also. To contribute to a high standard of health at the Hill Station, the rations have been good, although, from the dearness of provisions comparatively, the dietary is not altogether of that full measure, it is remarked, which the soldier, with his residue of pecuniary means, could and would secure.

In the lowlands of Jamaica, the black soldier's condition as regards duties is shown to be much more that entailed by those of a garrison town. He is stationed at Up Park Camp near the capital of the island, where guards are frequent and nights in bed correspondingly few, and, as his barracks occupy a large area of enclosed ground, frequent fatigues are necessary to maintain this in good sanitary condition, by keeping down the tropical growth of bush in the neighbourhood. These fatigues, in addition to the necessary military instruction and frequent drills, prove the more trying to his effectiveness when coupled with the circumstance that he is provided with only two meals a-day, a breakfast at 8 A.M. and a dinner at noon, leaving a period of nearly 20 hours without any systematic or regularly-provided sustenance.

The Principal Medical Officer had brought under the consideration of the authorities the question of a third meal daily, an evening one, for these soldiers and his opinion as to its necessity is forcibly supported by that of the experienced Medical Officers familiar with the morale and habits of black troops They consider the want of such an organised meal a very great defect and probable cause of a greater ratio of disease and mortality in these regiments than should be found amongst the men in their native climate and under the conditions of their military services.

Amongst the sanitary measures of the year, an important one was that of sending up to Newcastle as many of the men of the Royal Artillery as could be spared from the low and unhealthy station of Port Royal. These men, chiefly the weak and sickly, were encamped on the mountain-site, and retained there until the cooler part of the year, with good results, although the year was a wet one at Newcastle, the total number of rainy days having been 158.

The Deputy Inspector-General details the works and services of improvement completed during the year under report, and as follows:—

At *Newcastle*, increased barrack accommodation was provided for officers, also a new chapel-school erected.

At *Up Park Camp*, an increase of ventilation in the men's barrack-rooms and in the prison cells was carried out; the hospital dead-house was enlarged. An excellent swimming-bath now exists, and is much used.

At *Kingston*, a lavatory was provided for the men in barracks.

At *Spanish Town*, roof-ventilation was given to the guard-room, and some addition made to the surface-drainage. The hospital was undergoing improvements and repairs, but had eventually to be pulled down, owing to the retaining-wall becoming unsafe.

At *Port Royal*, the lock-up room was enlarged, and sun-shades were placed on the barrack windows.

It is added, generally, that many important sanitary improvements in the military posts of the island had been authorised for execution in 1863.

Amongst these prospective services were intended, at Newcastle, baths to each existing lavatory, and an additional lavatory. Baking ovens were also to be supplied. Family quarters were still specially required, the married soldiers being only under shelter of "wattle and dab" huts—very inadequate accommodation.

At Up Park Camp, a new lavoratory and an extension of the present small one were to be provided.

At Port Royal, defective bath and lavatory accommodation had been met, in some degree, by the men being paraded every morning at 6 o'clock to bathe in the sea.

The meteorological record of an ordinary year at the mountain-station of Newcastle may be here offered.

1859 Months.	Temperature for Year.				Rain-Fall in Inches.	Winds.
	Mean Minimum.	Mean Maximum.	Mean of Month.	Mean Monthly Dew Point		
January...	60·1	69·4	63·6	57·8	2·68	N.W. Westerly
February..	59·8	68·3	61·1	57·9	5·32	S.E.N. Westerly
March.....	59·9	70·2	64·1	58·1	0·60	N.W. and S. Easterly
April.....	61·1	72·1	65·9	58·5	6·75	S.E. and N. Westerly
May......	62·2	72·4	66·0	60·6	10·55	N.W. Westerly
June......	63·7	69·9	66·4	61·7	12·48	S.E. and N. Westerly
July......	63·7	74·2	67·5	61·5	6·87	N. Westerly
August....	64·5	72·8	67·7	61·0	4·38	S.E. and N. Westerly
September.	64·4	73·5	67·4	61·3	15·95	N.W. Variable
October....	64·7	73·4	67·5	61·8	10·97	N.W. E.S.E.
November.	63·6	72·1	66·5	60·9	9·20	N.W. E.S.E. N.E.
December..	61·8	70·4	65·2	59·0	2·10	N.W. and E.S.

In regard to the rationing of the troops, no alteration from the previous year's arrangements had been introduced. Two days a-week of salt meat were still in the order of supply. Satisfaction was generally expressed with the qualities of the provisions, but the Deputy Inspector-General thought that mutton might advantageously be entered in the Commissariat contract, as a variety to the beef, and which, he was of opinion, the island would fairly supply sufficiently cheaply in the end were the demand steady. He makes particular allusion to the good quality of the bread furnished to the troops at Newcastle, where it is made by the men themselves at the venture of the contractor. The flour is found them, and the bread is served out white, sweet, and usually very well baked, superior to the article provided by the contractor for the lowland stations. Biscuit, as a general issue, has been given three times a-month in lieu of bread; it is required to be kept as a provisional store in certain quantities at each station and, to prevent its spoiling by long keeping, it is issued to the men occasionally as above.

In respect of the clothing and duties of the troops nothing is represented as differing materially from the condition and circumstances of the preceding year.*

Recreation rooms having been ordered by the authorities to be commenced at all the stations—a great boon is, thus, in prospect for the soldier's necessity.

Honduras.

The Report of this year by Staff Surgeon Ingham, in sanitary references, is very much a reflex of those of his predecessors in charge. He represents the buildings occupied by the troops, both at Belize (head quarters) and at Corosal, 80 miles distant in a northern direction and proportionately better climate, to be now in a very dilapidated state, with the exception of the head-quarters hospital, which is of comparatively recent erection, but it was understood they were to undergo a thorough repair. He reiterates the opinion of the many as to the site of the Belize barracks (built in 1816), that a worse position could not well have been chosen; it is on a delta between the northern and southern mouths of the Belize river, on a low swampy island covered with dense jungle and mangrove, the sea beach, even, being for several months of the year a foul quagmire and a prominent source of disease. To better this condition of things Dr. Ingham had proposed to the authorities the measure of cutting drains through this swamp so as to admit of the ebb and flow of the tide, and, in that way, to convert the stagnant water into more or less a stream—this course, too, he expected would carry off the vast quantities of decomposed animal and vegetable matter which had then accumulated—and he looked hopefully to a result in a considerably improved sanitary state of the garrison, the town, and the neighbourhood, if his suggestion were carried out.

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* The Artillery, however, only received the new light clothing this year, a delay of supply appearing to have been incurred.

The Surgeon of the European Battalion at Newcastle recommends flannel under-clothing more and more, from longer experience of the climate, and in consequence of the damp and rain which prevail during part of the year.

At the detached station of Corosal the chief cause of disease was in a great measure attributed to the bad accommodation for the troops. In the early part of the season the barracks there were burned down, and the men had, in consequence, to resort to some old thatched buildings which, in wet weather, afforded no sufficient protection.

In adverting to such sanitary improvements as were effected during the year, the Staff-Surgeon mentions the cutting and burning the dense mangrove jungle in rear of the garrison of Belize, clearing away foul collections on the beach in front of the barracks, &c.; but he much regretted the want of a general system of better drainage of the Government site, which he thinks could be effected without great difficulty or expense, in the foregoing manner which he proposed of letting in a flow of fresh sea-water at each tide and facilitating its reflux by drains, a course which appears to have been formerly in operation until the drains were allowed, of late years, to silt up.

The Bahamas.

Nassau, although out of the ordinary zone of yellow fever, was this year visited by the disease in epidemic form during the months of August and September. In course of June, July, and August humidity was greater than it had been observed to be for ten previous years. The consequence appears to have been an excess of vegetation, rainy nights were succeeded by hot, steamy, and oppressive days, to the influences of which unusual weather the senior Medical Officer, Surgeon Curtiss Martin of the 2nd West India Regiment, has attributed extensive and concentrated malaria; and, although he believes several cases of the disease were from imported source, little doubt remained in his mind as to cases, more or less allied in character to yellow fever, having proved intrinsically of endemic origin on this occasion.

With the foregoing conditions of an exceptional hygrometric season there appears to have existed an unusually crowded and foul state of the harbour, resulting from the American war, also a neglect of drainage and sanitary police of the town—a concurrence of circumstances quite sufficient to account for an outbreak of the kind in an epidemic season specially disposing.

At the west end of the town exists a sailors' lodging-house in which eight deaths from the epidemic occurred and, whilst the usual residents did not suffer, the lodgers are represented to have been attacked by the disease almost without exception after a few days of their sojourn, a circumstance indicating, as Mr. Martin observes, an acclimatization so far in favour of the former; yet, in the month of July, malarious influences would seem to have become so intensified over the island generally that the European sailors ceased to be the only victims, and the black and coloured population came to suffer in as great, if not greater, a degree than the white from fever, although, as it is inferred, the remittent and intermittent were the forms amongst these classes. Whilst yellow fever broke out on 16th August on board Her Majesty's ship "Petrel," which had been lying in the port for some time previously, and from which seven cases were landed, the troops on shore fortunately escaped so greatly from the virulence of the epidemic as to lose only two European officers by it, and in a strength of some 400 black troops, with about 20 admissions amongst these under the head of febris remittens, only one death therefrom is represented.

So special an immunity as the above may be attributed largely to superior barrack accommodation and sanitary care. Regret, however, is entertained as to the faulty position of the officers' barracks which, had they been built like the men's, facing north and south, would have equally received the full benefit of the prevailing winds, and also, if constructed on the same line with them, might have been more detached from the town and have had greater space for a more distant position of their own accessories, latrines, urinals, stables, &c., all of which are more or less a nuisance on their present locality of not more than 20 yards from the quarters.

The hospital accommodation for the troops has come under consideration of the authorities as to extension and improvement. Meanwhile Mr. Martin called attention to the insufficiency of the establishment and the necessity of enlargement to meet such exigencies as those of this, an epidemic year, in the means of segregating cases from the ordinary sick. The available building for the increased necessities of this year was a supplementary and hired one, the retention of which, meanwhile, has been advocated by the officer in command, and by the Medical Officer in charge, upon the plea of the constant intercourse with the South American ports and the West India Islands, the station in this way being liable to importation of disease in addition to endemic emergencies.

THE WINDWARD AND LEEWARD COMMAND.

The year 1862 was one of yellow fever recurrence at Barbados, and in epidemic visitation. Dr. McGregor, the Deputy Inspector-General of Hospitals, reports that there was observed a greater range than usual in the reading of the barometer at certain seasons, although no very great difference was marked in the annual mean in comparison with preceding years. During August, September, and October, an increase in the range of temperature of the air was experienced, and also a "great range between the solar and terrestrial radiation, equalling sometimes as much as 61 or more degrees." These ranges are, in the observation of the long experienced medical practitioners of the colony, indicators of sickness, and Dr. McGregor deduces how important it becomes that troops should not occupy, for sleeping purpose at least, during the unhealthy season of the year, any ground-floor barrack rooms of the low-positioned garrison of St. Ann's.

Some of the months attracted more particular notice. In June, lunar halos were frequently seen, also a great deal of sheet lightning in the fore part of the night was observed, and, occasionally, thunder storms took place. In July three cases of most unmistakable yellow fever were admitted to the General Hospital near Bridgetown. In August the heat proved most oppressive, the atmosphere being in a state of complete calm, often the sequel of a heavy storm with thunder and lightning. On the evening of 19th August a comet was observed travelling from east to west with great velocity, and this phenomenon was seen nightly till the beginning of the ensuing month. The last notice of any comet was immediately before Barbados was devastated by cholera in 1854. By this time yellow fever was first showing itself in the garrison of St. Ann's. In September oppressive heat prevailed, extraordinary nimbi, accompanied by loud thunder and vivid forked lightning, came up from the westward against the wind, rain deluging the island for the time. The garrison now became very unhealthy, and yellow fever extended. Heavy storms and subsequent oppressive heat characterized October also, and fever of yellow or severe remittent type continued to prevail. In November the epidemic constitution of the atmosphere moderated, and in December the weather became seasonable, and the sanitary condition of the island was restored.

Dr. McGregor, referring to the circumstance of yellow fever usually springing into activity in the autumnal months, when the sun is in northern career, observes that during this time the force of the north-east trade-wind is paralyzed, and the belt of calms advanced further north; in connection with which meteorological incident, as regards the latitude and site of Barbados, the efficacy of the refreshing trade-wind is reversed in so much that the emanations from the town and garrison, with products of decomposing matters along the adjacent shore, uusally wafted to sea, are rolled back on the land, generating fever ordinarily, and, in exceptional years as this of 1862, of epidemic character.

The troops remained exempt from the disease until the end of August, cases then showing themselves on the ground-floor of the Stone Barracks, low lying and worst positioned of the garrison. This floor was at once vacated, and its occupants were removed to the higher position of the Brick Barracks, although to occupy the lower floor of these; cases, however, came to be admitted from the latter, and now also from the upper flat of the Stone—the first assailed barracks. From this last, also, the troops were removed on the 4th September, and placed under canvas behind the Brick Barracks.

Deaths from the disease were occurring in the garrison more or less sporadically, up to the 15th of September, by which time 39 admissions for fever among the white troops, with 3 deaths, had occurred, and 3 officers had fallen victims to the yellow type. These deaths led to the measure of encamping the troops, a course which had been forecast, but which appears to have been in suspense pending necessary preparations which had been making for the purpose at the selected sites of Gun Hill and the Naval Hospital, the former some five or six miles, and the latter about one mile from the garrison of St. Ann's. To Gun Hill it would appear to have taken four days to effect the transfer in whole of the 1st Battalion, 21st Foot, from the Brick Barracks. The measure of encampment proved, as to each locality selected, one of the best effect,—for whatever fevers did occur in the camps, subsequently, were pronounced generally as of the ordinary remittent type of the climate.

Dr. McGregor regrets, however, a drawback to what was so satisfactory in the camping expedient, adverting to the unfortunate fate of officers of the Black Corps. As a general rule, on these epidemic visitations, it is not customary to encamp these troops; and hence, for discipline sake, their officers and white non-commissioned officers remain at hand to them. More unfortunately for these officers on this occasion, they appear to have expressed a great objection to going under canvas away from their men, and remonstrated against the proposal; they remained in barracks, and four of them fell victims to yellow fever.

Dr. McGregor specifies the total loss among the military by the epidemic to have been 17 cases, three of which were at least of doubtful stamp. The visitation of 1862 was, therefore, on the whole, of limited range compared with similar recurrences of the disease connected with the medical history of the island.

The statistics of the disease will be afforded in their special department of the Volume, and, of the general sanitary measures pursued throughout the course of the epidemic, it may suffice to report that the duties of daily supervision throughout the garrison, and vigilance as to all details appertaining to the police of barracks, and the cleanliness and proper condition of drains, sewers, latrines, urinals, and other accessories, were fulfilled to the end of remedying all evils connected therewith as they arose or were discovered.

Weighty considerations were given, in sanitary interest, after this last of many epidemic visitations, to a question of abandoning the garrison of St. Ann's as far as military necessities would admit, and of cantoning as many troops as could be spared, from the current garrison duties, on some one of the more elevated positions of the island. Several such sites were explored by the medical and military authorities, ranging to one of an altitude of about 1,000 feet, but in each instance some disadvantage was found to counterbalance advantage, want of sufficient area here, questionable water supply there, and still the doubt of immunity from yellow fever at any, if occupied by masses of men, however exempt the locality might have been from the disease hitherto under limited and sparse habitation.

Retention of St. Ann's has been eventually decided on, and a re-distribution of the troops in this garrison and its existing barracks, in such a way as that every soldier should have ample cubic space in upper floor apartments, while the ground floors be set apart for offices and stores, and uses of similar purport. As a necessary result, new barrack structures came to be considered as additions to the present garrison, and where sanitary eligibility could concur with convenience of site.

At the close of the year measures were in train, to remedy many existing sanitary defects of the garrison, to institute better ventilation of barracks, to provide better means of cooking, to remodel latrine and urinal accommodation, and to reform the drainage and sewerage system of the whole military site. Some important additions were to be made to the officers' accommodation, and an urgent want of appropriate quarters for the married soldiers was not overlooked. These families have hitherto had to live in wretched huts or hovels outside the garrison, and at a high rent.

Surgeon Greer, in more especial Report of his corps (1st Battalion, 21st Foot) occupying the Brick Barracks, urges a remodelling and extension of ablution accommodation, and, now that the garrison is so amply endowed from the new source of water supply, the provision of a plunge bath or tank for the men. He refers to a necessity of erecting a commodious guard and prisoners' room for these barracks, and, under toleration of the present system of canteens, that a more suitable building should be provided than the present one, which was never intended for the purpose. In the West Indies all barrack refreshment institutions should be under commissariat or regimental provision, for nowhere is the canteen-keeper's interest more opposed, as Mr. Greer observes, to that of the soldier.

A plan of the garrison of St. Ann's is appended.

British Guiana.—Surgeon-Major Elliot, C.B., represents, in his annual Report of this station, that during the wet season, May to August, the garrison grounds of George Town, Demerara, were far from being in a good sanitary state; and he suggested, to the officer commanding, the employment of fatigue parties of the troops to keep down the rank grass, weeds, and rushes, to clean surface drains, and put the military burial ground in better order, the wooden tablets thereof being all but concealed by the grass and shrubs. The sanitary results from the above, and general hygienic vigilance, characterized the year favourably, and more especially the season of it above referred to. Towards maintaining the health of the troops as systematically as the arrangement could tend to, Mr. Elliot had recommended the employment of three paid garrison mowers, to be employed in keeping in check the growth of all rankness of grass, weeds, and bush in the vicinity of the barracks, in clearing surface drains, and maintaining in order the garrison grounds generally, an arrangement which, if properly carried out, he was of opinion would render the Eve Leary Barracks, so well situated for the purpose of ventilation, as healthy as any in the West Indies; and, when epidemic disease should unfortunately occur, its visitation and virulence might well be expected to be modified.

It had been necessary, in order to provide accommodation for a company of black troops, to assign to them an unoccupied wing of the Garrison Hospital. This was, of course, represented by the Principal Medical Officer to be a very objectionable arrangement for all, and greatly so for the sick. Anticipating the possible event of this appropriation becoming continuous, and the company not to be withdrawn from the strength of the garrison, Mr. Elliot recommended the construction of proper barrack accommodation for them.

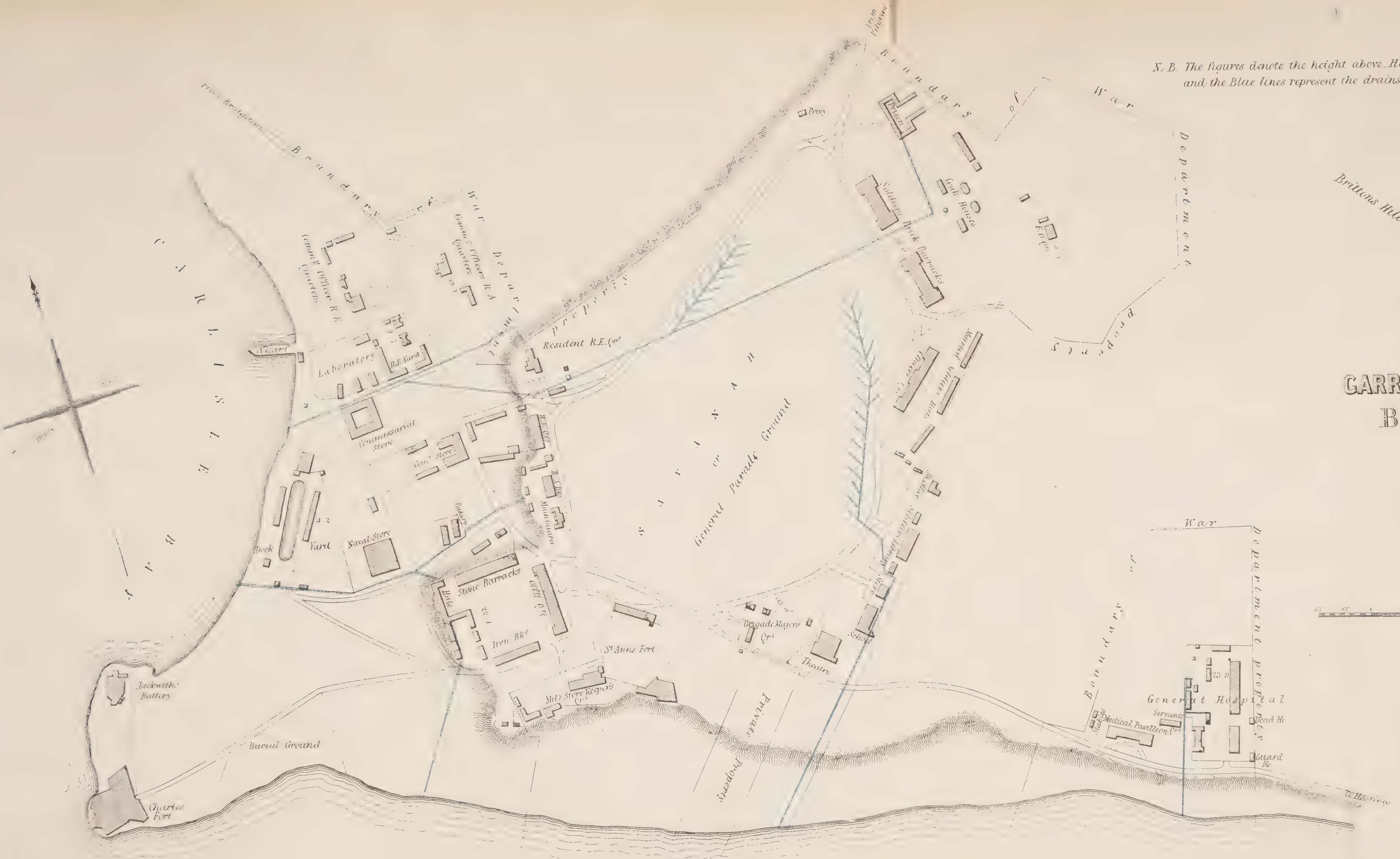
The most notable sanitary improvement, and addition to the barrack accessories this year, was the erection of a new ablution house, with Macfarlane's apparatus, proving in this climate a boon and great comfort to the men, who had previously been afforded no adequate or convenient means of the kind.

With reference to *Berbice*, the out-station of Demerara, Mr. Elliot represents the bad state of Fort Canje, through the circumstance of the Koker being in a dilapidated state, excessive vegetation having shot up within the barrack enclosure, and the whole surface being in need of proper draining. The Koker appears to have been occasionally patched up, but without effect; this year it was washed away, silting took place, and exit for the trench water was obstructed: under the tropical sun this dried up, leaving in some places pools, in others mud, the whole miasmatic and of foul odour. A new Koker is said to be most necessary if this fort is to be retained, and rendered fit for occupation.

At *Trinidad*, Staff Surgeon Donnall had little to report as regards any conditions of this year, which proved a very healthy one to the military. No barrack works of importance were undertaken. The drains of the St. James's Barracks, radically faulty from circumstances of the site, remained in much the same unsatisfactory condition generally, although during the rainy season in more effective order. A boon, and a great one, was anticipated, Mr. Donnall states, in the Colonial Government having consented to provide means of meeting the drainage evil more effectually, in improving its flow towards the sea by utilizing for the purpose a watercourse adjacent to the barracks.

PLAN
of the
GARRISON OF S^T ANNS, BARBADOS.

N. B. The figures denote the height above High Water Mark and the Blue lines represent the drains.



Scale 200 f^t = 1 Inch.

St. Lucia.—Of the comparatively small military detachment at this island the Report for 1862 is in every respect favourable. Health prevailed among the men during the year. The good natural drainage, down the sides of the Morne, is referred to by the Medical Officer in charge; and, although kitchen vegetables for the troops continued of deficient supply, the scarcity, he observes, was counterbalanced by the abundance of good fruit at their command.

Of the Ration supplies, character of Duties, and nature of Clothing of the Troops in the West Indies, as bearing on their health, there has been nothing prejudicial to report, nor anything distinctive from the circumstances of the preceding year.

ST. HELENA.

Mr. Mullins, Surgeon of the Local Regiment, epitomizes a topographical sketch of the Island as follows:—

"St. Helena springs abruptly from the sea by lofty precipitous headlands, intersected by ravines. At a distance its heights, varying from 600 to 2,000 feet, present a dreary, barren aspect, but its interior is in many places picturesque in a high degree. It is mostly composed of soft porous conglomerate, chiefly made up of calcined matter, but blue and grey lava stone, sands, marls, and various schists also abound. It possesses 212 springs of water, which are estimated as flowing at the rate of 800 gallons an hour on a general average. The climate of its heights, more particularly, is often of unrivalled excellence, and when the physical system has not been already over relaxed, exercises a salutary influence on general health. From its position in the centre of the south-east "trade wind," and from attracting by its height a mass of clouds which screen the sun's more intense rays, it secures a large share of salubrity to its residents. The diseases obtaining on its heights are such as generally prevail in more northern latitudes—while, in the valleys, fevers, dysentery, and other tropical diseases predominate. Relatively, in the vegetable kingdom, the productions on the heights are those of the south of Europe, and, in the ravines and valleys, such as are essentially of tropical character."

The military strength occupying the Island during 1862 held an average of about 700 men—of whom 607 were accommodated in barrack-rooms, at the average allotment of 620 cubic feet of air space each—whilst a small portion was under canvas for a time, 90 men in tents, and assigned an average of 130 cubic feet each.

In adverting to the position of the Main Barracks in the centre of the St. James's Valley and at an elevation of 150 feet above the sea level, surrounded, however, by a dense, semi-negro and filthy populace, Mr. Mullins reports that they proved as healthy this year as, under their surrounding circumstances, could be expected. At the other stations, Ladder Hill, and Dead Wood Camp especially, elevated, detached, and cool, health prevailed in a high degree.

A wing of the Town Barracks (St. James's), inferiorly ventilated, was under consideration for certain points of reconstruction, unless an intention were fulfilled of removing another company to Dead Wood—which would be, in every respect, a desirable sanitary measure.

The conveniences of bath accommodation served amply for the troops, and fortunately so, as bathing parades cannot be had recourse to in consequence of the abrupt depths of the sea and a prevalence of sharks.

In the culinary interests much advantage was anticipated from the teaching of a sergeant cook, of the Army Hospital Corps, recently arrived.

The station supplies were furnished satisfactorily, salt meat constituting an issue on four days of the week; but a Government contract, in addition, for all grocery articles was greatly desired, and has since been strongly recommended by the Director-General, to secure the best interests of the garrison.

The clothing of the troops was well adapted to the climate, and all practicable means were employed to recreate the men in their leisure hours by the advantages of a library, by occasional theatricals, and by quoits and other athletic exercises. The duties, admitting of an average of between five and six nights a week in bed, were in their degree propitious to health.

On the conditions of the Military Hospital a very favourable report is made in sanitary respect. A bath room, specially, was still a want, but one which had been estimated for. The cubic accommodation in the wards availed to the extent of 1106 feet to each patient of 24—the average of daily sick for the year.

A municipal sanitary measure was established in improving the filthy neighbourhood of the Main Barracks, James Town, works of drainage having been set in progress.

Mr. Mullins has stated that, although disease amongst the troops has this year exhibited a decrease of nearly 25 per cent. on the preceding year, and the zymotic class has borne a proportionate diminution, yet the circumstance of the latter being as four to seven on all admissions to hospital, has induced him to refer its comparative excess to the site of the Main Barracks being in the town of St. James, before alluded to, and environed as they are by wine shops ever full of sailors, whose ready money creates prevailing drunkenness to an unfortunate extent.

THE STATIONS OF THE WEST COAST OF AFRICA.

Sierra Leone.

The average annual strength at this station consisted of 17 European officers and 316 men of black troops.

The sanitary Report of the senior Medical Officer, Staff Assistant-Surgeon Skues, states that a detachment had been employed on active service, and that a large proportion of the admissions to hospital had been from among the men upon this duty.

The year had been one of the ordinary climatic conditions, and an average amount of rain fell. No very important measures of sanitary advance as to improvement of the barrack or hospital accommodation are specified by the Medical Officer. The officers' quarters had still the disadvantage of imperfect roofing, causing leaks, and leading to illness in several instances, and, with reference to the barrack rooms, the occasional use of fires during the rainy season is strongly suggested, to obviate excessive dampness.

In regard to the hospital, no bath and ablution room had as yet been provided ; although this, so necessary an accessory, had been promised with the sundry other measures of hygienic improvement awaiting means of accomplishments at the station.

The deaths in hospital in course of the year amounted to 9, of which 4 were from phthisis and 5 from pneumonia, orders of disease by which the black soldier would appear to be peculiarly assailable, notwithstanding that his sanitary advantages in the service must be deemed superior to any he could have had in his condition prior to enlistment. Field service this year, and consequent exposure, has been a probable auxiliary cause of so marked a mortality from pulmonary disease alone.

The Gold Coast.

At this station of the West Coast of Africa, the senior Medical Officer, Staff-Surgeon O'Callaghan, reports that an unhealthy year was experienced, and scarce a European, civil or military, escaped remittent fever. Natural insalubrity of site would appear to be a cause more prominent than any very exceptional circumstances of climate during the season more essentially productive of endemic diseases. The positions occupied by the troops must have been selected almost entirely from military necessities, and it is a question whether sanitary choice was afforded consideration on the occasions of their selection. These positions are on the low level of the coast line, often enveloped in mist when the mountains behind are under a clear atmosphere. Again the Medical Officers strongly advocate the measure of a sanatarium on some convenient spot of these elevated districts for the European officers, an early removal to which might save lives, and would certainly diminish the constantly recurring necessity of a change to England on the recommendation of medical boards.

In the forts and barracks of this Command (the Gold Coast) many valuable suggestions, general and sanitary, which had been proposed on the official visit of Captain Noble, R.E., in 1860, were in great measure carried out in course of the year under review, and, as represented, advantageously to the comfort of the troops.

The out-station of Dix Cove awaited improvements in accommodation for the men, and which improvements were greatly wanting.

The military posts of Christianburgh Castle and James Fort were rendered uninhabitable by an earthquake in July of this year.

The men of the Gold Coast Artillery had hitherto been allowed to ration themselves. Their food consisted mainly of fish and vegetables and, upon a diet of so little nutritive value, the Medical Officers conceive they would have been unequal to undergo the duties of their arm of the service for a duration under pressing military circumstances.

The water supplies, being chiefly of tank collection, were abundant this year, one of an excess of rainfall.

With regard to the uniform of the black troops (the Zouave costume) satisfaction has been found with the lighter material of which the loose trowser is now made, for sanitary comfort in the climate it is a great improvement over the former thick woollen article worn, although, for field service in the bush of this country, it is found to be an unsuited garment.

The Gambia.

The sanitary report from this station of the West Coast specifies no services of improvement or material change as to the barrack and hospital conditions for the troops this year, and no unusual sickness had occurred.

The senior Medical Officer, Staff Surgeon Bradshaw, gives the following short topographical sketch :—

The head-quarters of the detachment of black troops doing duty on the Gambia Station is at Bathurst, on the Island of St. Mary's, about seven miles from the mouth of the river. The out-stations are Cape St. Mary's, on the sea-coast, Fort Bullen, three miles from Bathurst on the opposite bank, and McCarthy's Island, 180 miles up the river. Bathurst is very little above the level of the sea (about five feet above high water mark), and is enclosed on the south-east by mangrove swamps, of which two-thirds of the island are composed.

Cape St. Mary's was originally resorted to as a convalescent station, for which object its elevation, 50 feet above the sea level, held an advantage over any place in the neighbourhood, and in its being more considerably distant from the influence of any mangrove swamp.

Fort Bullen stands at the end of a narrow neck of land which runs out towards the sea for about half-a-mile, and a broad belt of mangrove swamp nearly separates this peninsula from the mainland.

McCarthy's Island is about six miles in length, and from one and a-half to two miles in width. The river here (although tidal action is perceived so high up from the coast) is fresh. The land is low and swampy, and in the rainy season the island is often to a large extent under water. The mainland rises gradually from the river bank at either side, and is in many parts densely wooded.

With the foregoing description of the several military posts of the Gambia, Staff Surgeon Bradshaw represents the climate during the dry season (November to June) to be comparatively healthy ; but, that when the rains set in, the country is transformed into a vast swamp, becoming also covered with rank vegetation, and then malarious fevers, intermittent and remittent, prostrate the European residents. The season most trying to the black troops, on the contrary, is that of the "Harmattan," the cold wind blowing in November and December from the north and casterly directions, these troops suffer then from pulmonary affections, as also from dysentery and diarrhœa.

The water supply of this district is represented to be good generally at the stations, although somewhat brackish, with exception of that obtained from a well in the hospital yard at Bathurst. At McCarthy's Island the river water is entirely used.

The troops in the Gambia Command are rationed by Government, and each man obtains a pound of fresh beef on five days of the week, and one of salt beef or pork on the other two, with a daily pound of bread, coffee forming a portion of his morning meal.

Lagos.

As information more detailed in regard to this newly established settlement on the West Coast of Africa may be desirable, a medico-topographical report by Staff Assistant-Surgeon Rowe, the Medical Officer in charge, will be afforded among the series of contributed papers attaching to this year's Departmental volume.

It may, therefore, be sufficient to advert shortly to the arrangements effected for the accommodation of the troops on this island in the delta of a tidal river, the site being characterised as low and swampy, with a neighbouring town of the filthiest description, without drainage of any kind, the district being fertile in malaria and endemic agency in generating ague, remittent fever, dysentery, &c.

Comparing it with the other stations of the West Coast, the Medical Officer alludes to sickness having been in excess at Lagos; but a very assignable reason is given for whatever rate of excess by the temporary nature of shelter which was alone available for the troops in the earlier periods of possession.

Looking to arrangements that were to follow for the permanent accommodation of the troops in barracks and hospital, the Director-General, in approval of a report by Staff Surgeon Curtiss Martin, recommended in March of this year, for the favourable consideration of His Royal Highness the Field-Marshal Commanding-in-Chief, that the buildings should be erected on supporting pillars at least eight feet above the ground, and so as to secure a thorough perflation of air underneath the floorings. He also advised that the structures should be of brick instead of constantly-perishing wood, and that spacious verandahs should be attached.

From the marshiness of the site and alluvial nature of the soil it was inferred that the water supply would be tainted with impurities, and drip stones, accordingly, were recommended to be supplied at once, in the proportion of one for every 25 men. Consideration was given to a site for the future barrack and hospital, indicated in Mr. Curtiss Martin's report, and, that its comparative advantages and sanitary eligibility might be favourably applied, the Director-General also recommended that the ground should be well prepared, and the levels sufficiently exposed to the sun before erection of the buildings was commenced.

The purport of the Sanitary Report to the end of the year, on the principal hygienic conditions of the station, is that the huts stand on such elevated ground as was afforded, that they are lofty, well roofed, and adapted to the climate, being in as healthy a position as the site on the outskirts of the settlement, and only a short distance from the Native Town, admitted; that the surface water, although disposed of on the spot by percolation only, was tolerably speedy in this process, and that the filtering of the water for domestic purposes had good results. The troops had still to cook extempore in the open air, and the latrine arrangements were not yet in good working order. The men were well rationed by the Government contract, the scale being a pound of fresh beef on five days a-week, and of salt pork on two, with the usual pound of bread daily.

In regard to a hospital establishment, a new structure was in progress, the sick having had to be provided for partly in a barrack hut meanwhile.

The duties falling to the lot of this detachment of troops admitted of their obtaining an average of five nights a week in bed.

THE CAPE OF GOOD HOPE COMMAND.

The Deputy Inspector-General of Hospitals, Mr. Lawson, reports that, in the year 1862, complaints are still made, in the Regimental Reports, of the deficiency of arrangements for ablution at certain stations. This is being gradually remedied

Complaints are also made of the want of ovens at some stations, and the inability to vary the cooking in consequence. This want is also being gradually removed.

Vegetables are, as heretofore, very scanty at the stations on the frontier, and, in consequence of long-continued droughts, compressed vegetables are issued from the Commissariat, and for which the men pay. Gardens are cultivated, to a limited extent only, at certain of the stations, by which a more plentiful and regular supply can be obtained.

The Medical Officer of the Cape Mounted Rifles deems the clothing unsuitable for his men. During the past summer, a loose cotton jacket was employed, but there was no change in the trousers, which are heavy, and the same for summer and winter wear. A lighter woollen material for summer, as in use with the Infantry, it is thought would be more comfortable for the men. This officer thinks the shako ill-suited to the climate without the white cover; and, Mr. Lawson observes, there is little doubt that, when much exposed to the sun, even in the cool weather, the latter is advisable.

The Surgeon of the Cape Mounted Rifles at Fort Beaufort expresses satisfaction with the new cavalry barracks, their position being elevated and healthy. For the necessities of men so continuously employed at heavy duties as those of this corps, good ablution means are most requisite, but he points out that a rude shed on the banks of the river is alone at hand to their use.

The Medical Officer of the 2nd Battalion 10th Foot considered the rooms of his corps at Keiskama Koeck over-crowded and not sufficiently ventilated; but Mr. Lawson states that the men had 450 cubic feet each in their rooms, and that there were windows on one side and loopholes in sufficient number on the other to insure free ventilation, if kept open and a breeze were stirring. Greater space and ridge-ventilation, he thinks, would be an improvement, but these can be introduced gradually only.

The streets around the Main Barracks in Cape Town are again commented on in strong terms and denounced. They are decided to be capable of great improvement; but, being under the Municipality, all efforts hitherto made have had but a limited influence in improving their condition. A new system of sewerage for Cape Town is stated to be now commencing, and which, if carried out, may remove much of this objectionable state of things, so long endured at imminent sanitary risks to the garrison and civil community. Fortunately, as the Surgeon of the 2nd Battalion of the 11th Foot, quartered in Cape Town, observes, the evil of the existing solely superficial drainage of the city is qualified by the rains of winter, and the foul sea-beach is periodically cleared by the storms of that season, which create strong tidal influences and currents.

With reference to the frontier station of King William's Town, this year the Surgeon of the 2nd Battalion 13th Foot cites the wonderfully healthy condition of his corps, notwithstanding the inferior barrack-accommodation afforded the men in wattle and dab huts, with mud floors. A mortality at a rate of only 5 per 1,000 per annum from disease affirms his remark.

The Surgeon of the 85th (Dr. Johnstone) reporting, this year, from the colony of Natal, states that the barracks at Fort Napier are situated on a hill about a quarter of a mile to the southward of, and about 100 feet above the city of Pieter Maritzberg, and about 2,100 feet above the sea-level. The fort forms three sides of a square, the southern side having fallen down about four years ago. The position, he observes, is extremely healthy.

The barrack buildings, chiefly old, are represented by Dr. Johnstone to be fairly ventilated; and he states that they were, in some respects, improved this year; but he is of opinion that new structures are required, and, more especially, a hospital on modern principles, the present one having hitherto been a mere makeshift of two barrack-rooms.

The scant means of amusement and recreation for the troops at this greatly isolated station, and, in connection with the latter circumstance, the depressing effect on their minds after a protracted sojourn, have been much dwelt upon. A fives court had been recommended many times, and at length a skittle-ground was obtained in connection with the construction of a new canteen. A commodious swimming-bath—a most acceptable resource in this climate—was available, but more was desired in the way of ordinary ablution means.

The water-supply is reported as satisfactory.

In regard to the clothing of the troops, the white drill trouser, elsewhere long obsolete, appears to have been continued in summer use here until comparatively recently, when the substitution of the light-blue serge was adopted, to the great comfort of all wearers, as well as in the interest of health.

The following short topographical sketch of the Colony of Natal is given from the Report of Dr. Johnstone:—

"The climate is remarkable for sudden vicissitudes of temperature. The thermometer averaged 64° during the year. The highest temperature was 95°, the lowest 32°. The rain-fall for the year was 27·48 inches. These sudden changes cause fevers, rheumatism, diarrhœa, dysentery (particularly along the coast), laryngeal and pulmonic affections, but the latter not to any great extent.

"The surface formation of the colony is undulating, having a gradual elevation from its eastern boundary (the sea-board) to the Diablenburg range of mountains, its western boundary. The latter is 4,500 feet above the sea-level. These undulations are broken, in many places, by hills and mountains, some with broad table-lands on their summits, others with precipitous faces.

"These hills are chiefly of red sandstone, granite, and trap. The soils vary at different parts of the colony; along the coasts they are rich alluvial deposits in the neighbourhood of the mouths of the large rivers. More inland, in some districts they are clayey, intermixed with a rich mould; in others, they are mixed with a loose, light sand. They are formed chiefly of sandstone, granite, gneiss, shale, and trap, pulverised and decomposed by atmospheric influence.

"The colony is well watered; numerous large rivers traverse the districts in all directions, and empty themselves into the sea. Two crops of cereals can be readily grown annually. The productions are numerous—Wheat (in small quantity), Barley, Oats, Arrow-root, Coffee, Sugar, Indigo, Cotton, and almost every kind of tropical fruit and vegetable along the coast. Oxen, Sheep, Goats, Horses, Mules, Pigs are numerous and thrive well. The diseases most prevalent are fevers of the simple continued, of remittent or gastric characters, rheumatism, ophthalmia, diarrhœa, dysentery, cardiac and hepatic affections."

THE MAURITIUS.

The Deputy Inspector-General, Dr. Archibald Gordon, C.B., in his review of this year enters into detail of cubic conditions at the several military posts, and states that the accommodation throughout the Command, by the distribution of the troops, during the year, may be considered to have been ample, and that the different barracks and hospitals afforded an average cubic space for each bed as follows:—

Port Louis Line Barracks, 550 to 58·414 cubic feet; Royal Artillery Barracks of Port Louis, 872 cubic feet; Fort Adelaide, 950; Fort William, 830; Royal Engineers, Fort George, 750; Caudan, 690. The accommodation at Fort George, however, is only temporary until barracks are constructed, when the present accommodation will revert to its original use for stores.

Of the out-posts at Mahebourg 507·11 to 555·84 cubic feet were obtained at Flacy, 691 cubic feet; at Grand River, S. E., 561 cubic feet; at Cannonier; Point 709$\frac{2}{3}\frac{1}{4}$ cubic feet. In Quarantine Huts, 481 cubic feet.

The average for hospitals varied from 2,000 to 6,358 cubic feet.

Adverting to the camps of rifle instruction, it is stated that the one at Petite Rivière consists of 5 huts, together with officers' quarters for the regulated number of the parties, and a small hut for the treatment of trifling cases of sickness, the more severe being sent to the garrison hospital at Port Louis. At Pointe D'Esney, during the period of instruction, the troops are encamped.

Amongst sanitary services during the past year, or rather at the close of the previous, a cooking-stove was fitted up in the Royal Artillery barracks, capable of boiling, baking, &c., for the whole of that arm of the service quartered in Port Louis, and which has been found to answer every kind of cooking necessary for the soldiers. Ventilators have been inserted into several of the rooms of their barracks on the north-east side, and the original guard-room has been converted into a canteen, also a new plunge bath is in the course of completion for them.

In Fort Adelaide the latrine, which for years had been a constant source of complaint and annoyance to the inmates, has been removed without the walls and a conversion has been made of it into a wash-house.

The kitchens of the Line Barracks of Port Louis are represented to be exceedingly unsatisfactory, and it is to be hoped, Dr. Gordon observes, that iron stoves or ranges will in the course of the present year be provided, as has already been the case in the Royal Artillery barrack, and at the principal outpost, Mahebourg.

Garrison Hospital.—One of the latrines has been converted on Garbert's* principle, and as regards the other, although it has been much improved by being carried out into deep water, nevertheless complaints are still made by the Medical Officers that its construction must be faulty, hence it would be advisable, Dr. Gordon thinks, to convert it also, like its fellow on the opposite side, and which measure he believes has been estimated for. When that work is executed no cesspools, he reports, would exist in barracks or hospitals.

The garrison hospital had been furnished with an iron stove, capable of boiling and steaming potatoes; but, as yet, no proper fire-place or ovenhad been constructed; however, estimates were forwarded to England for approval, and it was thought probable this work would be carried out during the present year, unless one of the iron ranges expected should be found suitable for the purpose.

An additional supply of water was to be brought into the garrison hospital by connecting the pipes with the main conveying the water from Grand River, and the carrying out of which only awaited the arrival of pipes, which had already been authorised.

Mahebourg, the principal outpost, had been recently provided with an iron cooking range capable of baking, &c., for the strength of that station, and it had been found to answer every purpose of cooking.

In the hospital at Mahebourg a bath-room, furnished with basins and supplied with water from a cistern communicating with the ward, had been constructed, and the Deputy Inspector-General conceives that the station may be considered in every way suitable for the location of troops if a new barrack were only erected to replace the old wooden one which is defective in ventilation, height of the upper storey, &c.; but he fears that it would be useless to incur expense upon the present building as it could never be converted into a comfortable barrack, and one adapted for the requirements of the present day, at any outlay of money.

At Flacq the barrack, he states, would, in like manner, require to be rebuilt, but in the meantime there is adequate accommodation for the strength of the usual detachment, and this, being the second outpost in the island in consideration of numerical strength, should be provided with a cooking range.

The other outposts, being only occupied by smaller detachments, he deems it unnecessay to incur any great expenditure on cooking ranges for them, greatly as these conveniences had been generally wanting in the Command.

The clothing of the troops is again reported as admirably adapted for the climate, and, during the summer months, the new light suit consisting of white smock frocks, white trousers, and forage caps with covers, was worn. The remark, however, is made that the use of the white cap-cover should be imperative on all regiments, and not left optional with commanding officers.

The island, this year, was visited by epidemic cholera, and the troops stationed in Port Louis are reported to have suffered somewhat severely, and to a greater extent than in previous visitations of the same epidemic; nevertheless, Dr. Gordon is of opinion that the severity of the disease could in no way be ascribed to overcrowding of barracks, or to other preventible causes; indeed, he thinks, the barracks for cleanliness could not have been surpassed; and, although the town population is somewhat numerous in their immediate neighbourhood, yet, taken as a whole, the district was tolerably clean, and the drainage, considering the site and fall to the sea, fair.

The epidemic, in as far as the troops were concerned, first made its appearance at Petite Rivière, the camp of rifle instruction, distant from

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* One of peat-charcoal, and well adapted, Dr. Gordon is of opinion, for all camp and barracks in tropical climates, as the deodorizing power obviates all nuisance.

Port Louis about 3½ miles, and situated on the sea-shore, a considerable distance from any habitation or village, and certainly, Dr. Gordon represents, the last of the localities he would have expected it to occur at.

The whole of the military stations, with the exception of Flacq and Black River, were visited by the disease, but to a comparatively trifling extent; the Royal Artillery and 2nd Battalion 24th Regiment quartered in the Line Barracks, Port Louis, felt the greatest weight of the epidemic, in so far as the troops were involved.

CEYLON.

Dr. Dane, the Deputy Inspector-General of Hospitals, states as follows:—That the condition of the roofs of the barracks at Trincomalee, the defective drainage at different stations, the badly-constructed cells for prisoners at Point de Galle (personally brought under the notice of the Major-General Commanding by him) the defects in the ablution rooms, and total want of the same at some places, coir nuisance at Jaffna leading to the most disgusting effluvia in the vicinity of the soldiers' quarters, the moat at the same station, the dilapidated condition of the hospital at Aambantotte, the bad position of the European hospital at Trincomalee, the faulty construction of the hospitals for the same class at Colombo and Kandy (although if, as he says, judged from the large amount of cubic space available for each man in the latter, the remark might not be thought an applicable one), the want of windows in barracks and hospitals in several localities, have all been brought under the notice of the proper authorities by him, and still remain (as stated by the Medical Officers) causes of sickness among the troops. And, though a comparison with the similar Sanitary Report for the year 1861 shows a favourable contrast as to the number of admissions for febrile diseases (so great a cause of sickness in this as in all tropical climates), and though in regard to other diseases, the year under report may be said to contrast favourably also, still he must repeat his conviction that a complete change in the construction of the buildings occupied by the European soldier in health and sickness will have to be made before he can be placed in a fair position to contend against the influence of the climate. And Dr. Dane observes further that the most just economy in the end would be a present liberal outlay to afford the troops the same advantages they have on other Eastern stations where he has served. The native soldier, he represents, must be in every sense of the word considered the inferior of the European, and he questions the wisdom of outlays for comfort of the former, whilst so many serious defects in a sanitary point of view as regards the latter remain conspicuous to every one serving in the colony as they do at present.

The old system of cesspools for the latrines is continued and should be changed for the more rational plan of constant daily removal of the soil, the construction of the privy for the detachment at Jaffna, altered last year, seems to have been found a decided improvement on the state of the one in use there up to 1861.

The change in the plan of dieting the soldiers of the Ceylon Rifles, referred to in the Report for the last-named year, seems to work well so far, and is anticipated (if properly carried out) to become most advantageous in point of health to these troops.

For the sick of the native troops a new scale of hospital dietary has been proposed; one which, while not repugnant to their class prejudices, will greatly aid their treatment under disease.

The arrangements for cubic space in the barracks, though more liberal than in former times in this Command, will not admit of the European soldier having that combined amount of accommodation, cubic and superficial, which is very especially desirable in this climate.

There is still reported to be a deficient supply of the vegetable element in the ration of the soldier, and which, as previously represented, might easily be remedied by the establishment of a public garden at the Hill station, Nuera Ellia.

No change has taken place in the cooking of the men's food—it is still carried out in a primitive manner. The kitchen at the General Hospital in Colombo has been much improved by a change in the construction of the fire-places. Cooking places are expected shortly to be erected for the married soldiers of the Ceylon Rifles at Kandy. A defect formerly noticed was the total absence of such necessary buildings for them.

In regard to new buildings, Dr. Dane mentions that the quarters for married soldiers in the fort of Colombo are fast approaching completion, Quarters for the married native soldiers, at Kurnegalle, and a new hospital for these troops at Trincomalee are ordered. The hospital at Nuera Ellia has been occupied for some months, though still, it is stated, wanting several of those appliances for comfort usually present in such establishments.

The new light clothing, reported on last year, has further proved most suitable for health and comfort in this climate.

The soldier has too few nights in bed at some of the stations, which the Principal Medical Officer states certainly must be injurious, though possibly not exhibited in any sudden outbreak of sickness; it undermines the stamina slowly, and predisposes him to epidemics or endemic influences more readily than if he had the proper amount of sleep essential for robust health. This very exhausting call upon the enduring powers of the troops has met with due representation to the military authorities.

The Deputy Inspector-General adverts to former occasions and special reports of his own, in which he urged fully the advantages a well managed establishment for weakly and convalescent men in the elevated regions of the island would confer on the service. He conceives that only partial benefit is derived from the present depôt, or rather detached post at Nuera Ellia, and he states that the robust aspect of the few soldiers stationed there speaks greatly in favour of an increase to the buildings, and of the adoption of a definite system for a sanatarium there: despite the rains and occasional fogs of the locality, he advocates this measure, as a now extended experience of the climate of Ceylon enables him to state that, up to the latest period, the benefits which this elevated district is capable of affording have not been called forth. As an instance he records the circumstance of his finding the soldiers using rice only with their meat, while the resident civilians were enjoying a profusion of potatoes, cabbages, carrots, beet-root, and other wholesome and essential articles of food, the produce of the locality.

On the subject of the invaliding of men from Ceylon. Dr. Dane pleads emphatically in his report of this year against the system hitherto of sending home those requiring change of climate at one fixed period of the year only, and he represents, that under this arrangement, in the consequent long intervals, disease, which would probably have yielded to immediate change, has been often found steadily to increase, and men have died before the invaliding period arrived, who might have been otherwise saved to the service. In 1859, a proposal was entertained to the purport of sending such cases periodically to the sanatarium, then in prospect at the Cape of Good Hope, but as this establishment never came into full operation and was eventually given up, the course of invaliding in this direction could not be adopted. Dr. Dane now advocates an arrangement with the Peninsular and Oriental Steam Company for the transit of invalid men from Point de Galle to Southampton.

An important question was put in November of this year (1862) by the Horse Guards authorities for the opinion of the Director-General on the subject of the service of regiments in this colony, and in connection with the stations of Mauritius and the Cape of Good Hope. He submitted for the consideration of His Royal Highness the Field-Marshal Commanding-in-Chief, that it was most desirable no European troops should serve longer at a time in Ceylon nor at the Mauritius than five years on account of the exhaustive results of long residence at either, coupled also with the depressing effects of the very monotonous character of the soldier's service at each. The Director-General, Dr. Gibson, C.B., recommended a transfer of each corps from these stations, after such a period, to the Cape of Good Hope, for the remainder of their tour of foreign service, as the arrangement would be productive of a very great economy of life, and a reduction in invaliding for permanent disabilities. With reference to this system of a rotation service, it was represented further by him, that it would be preferable that the soldier, fresh from home service, should be sent to Ceylon or Mauritius, in the first instance, for the five years, and then be sent on to the Cape to complete his appointed term abroad.

This rotation system is now an adopted one.

NEW ZEALAND.

Mr. Mouat, C.B., V.C., Deputy Inspector-General of Hospitals, reports that since the preceding year, he has found very little of novelty or advance in sanitary improvements to record. Although there has been no field-service during the year, yet a large portion of the force is represented to have been under canvas during the whole summer, either at rifle-practice or military road-making, the labour at the latter employment being at times great (and even dangerous), but it did not injuriously affect the health of the men.

Notwithstanding that a considerable number of the older soldiers in the force had for almost the last three years lived under canvas, even these were found to have retained their health well.

Mr. Mouat observes that the comparative absence of some diseases, as venereal, malarious fever, and the entire absence of others, such as small-pox and cholera, have gone far to account for the different rates of sickness amongst the troops serving in this colony in contrast with those at home; and he is of opinion that in no part of the world could men be exposed to the vicissitudes and discomforts of camp-life with greater impunity; fevers and bowel affections, the usual scourges of armies in the field, occurring but slightly in excess of the incidents from the same in ordinary garrison towns. A singularly improved state of health of two regiments which joined the force from previous service in India, is adduced as strongly corroborative of the salubrious influence of the climate of New Zealand.

The strength of the force of all arms, on the 31st December, was 5,384; and although, considering the more or less severity of their duties, and a consequent exposure of the men, their health was deemed remarkably good, Mr. Mouat suggests that their condition in this respect even was capable of being improved.

He represents that there are still many sanitary requirements (alluded to in previous Reports) unmet, and that time must necessarily elapse before all the improvements which have been suggested for barracks and hospitals can be carried into effect. The force in the Command had attained a much higher strength than the ordinary accommodation was intended for, and a consequent overcrowding in barracks and huts resulted to some extent, yet, as the Deputy Inspector-General observes, the only zymotic disease believed relative thereto was ophthalmia, and it continued to infest certain of the regiments in persistent excess.

From the reiterated representations, this colony would appear still to lag behind the spirit of the age in its share of sanitary provision for the troops; and Mr. Mouat writes,—"It is useless Medical Officers reporting, year after year, the same sanitary defects, only to receive a stereotyped answer,—Expense!" He is of opinion that, were the necessary improvements made in barracks and huts, in kitchen means for varied cooking, and, not less, in those of personal cleanliness, by bath and adequate ablution-houses, the conditions of health of the army serving here would be greatly enhanced, even good as it has hitherto been; and, moreover, that, if the service could afford them at least four consecutive nights in bed, and military control could be brought to check intemperance, there need be no reason why the mortality amongst the troops in this climate should not be reduced one-half, and the invaliding in no less a ratio.

AUSTRALIA.

Melbourne.—Amongst the sanitary arrangements in course of the year, allusion is made to a portion of the troops which had been quartered heretofore in a temporary building, called the Spencer-street Barracks, having been transferred to the new barracks, and the former given over to the Colony. Connected with this arrangement, some of the soldiers' families became provided for in the main (or still called "new") barracks. The use of coal appears to have been substituted for wood. Ablution means had been enlarged, and bath-rooms rendered available—a boon reported to have been felt as a great advantage under an often semi-tropical condition of the climate. Each bath is represented, also, to have a shower apparatus connected with it. A plentiful supply of water had been laid on to the barracks, and further improvements were expected to meet their hygienic necessities. Cesspits were still the system, but might be anticipated to give way to flushing power, as a command of water could be had; but the whole system of drainage of the Melbourne new barracks is reported to be under the consideration of the Colonial Legislature. With recurring reference to the position of these barracks, every Medical Officer who has to report upon them deems it his duty to draw an odious comparison of them to one unvarying purport—that, in the whole vicinity of Melbourne, a worse site could not have been selected, and where, as the Sanitary Report of this year states, it is only surprising that sickness and mortality among the troops has been so small. The choice of ground was made before the representations of Medical Officers were accorded the full measure of consideration the new Medical Regulations of the Army establish.

At *Sydney* and *Hobart Town*, progress, however gradual, was also making in services for the sanitary welfare of the troops, and, prominently, in the means of personal ablution—a want a long time urged for all the military stations.

The Australian Command had been denuded materially in its strength by the transfer of troops to New Zealand, and in this way rendered the night-duties somewhat severe—three nights in bed to one on guard.

The troops were still, it would appear, unsupplied with the new semi-tropical clothing, and were sweltering, at certain seasons, under the oppressive red cloth tunic.

The hospital statistics, however, showing only an annual average ratio of 3½ per cent. of sick, bespeak the very genial climatic conditions the troops serve under.

THE CHINA COMMAND.

SHANGHAI.

In relation to the statistical results of the epidemic cholera which visited the settlement during the month of May, June, July, August, and September of 1862, it may be well to afford a topographical and sanitary sketch of Shanghai and its neighbourhood, and the following abstract is derived from the Annual Medical Report by Dr. Home, Deputy Inspector-Generaal nd Principal Medical Officer.

The great commercial city is situated on the left bank of the River Woosung, and eight miles from its junction with the great Yang-tse-Kiang. It is one of the most important of the Empire. It is described as of two parts, the Chinese city proper and the adjacent European settlement, the latter being again divided into a native and European quarter. The city is a walled one and surrounded by a broad and, to some extent, navigable tidal ditch. Within the gates denominated the north, south, and west, two sites are distinguished—the one as that immediately facing the Woosung, densely populated, and in which exist all the shops and warehouses, the other being represented (and as would be paradoxical elsewhere) as the agricultural part of the town, laying adjacent to the walls bordering the open country. No suburbs, properly so called, exist except on the river face.

The streets of the commercial districts are stated to be narrow, tortuous and filthily offensive; the district occupied by the European community, is composed of gardens with private houses interspersed, whilst, near the walls, large temples, with adjoining residences for the priests, exist. The houses, generally, are one-storied, raised in some instances a few feet above the ground, but more frequently resting on its level. The whole city, particularly the so-called agricultural portion of it, is intersected by tidal ditches, at low water reeking with offensive emanations from muddy banks, and on occasions of high tides the floors of the native dwellings are damp and, sometimes, even flooded. The intramural gardens are twice daily covered with liquid human manure; nearly every native met with in the narrow lanes is found to be carrying buckets of such excreta, and each garden has its own one or two revoltingly offensive latrines opening on the lane, and for public use. If to all this be added the universal practice of intramural sepulture or, more correctly speaking, no sepulture, as Dr. Home remarks, for the dead are said to be kept in the native houses so long as the stench from decomposition will permit, and then placed in some sacred portion of the adjoining grounds (coffined only), no greater essences of sanitary evil can well be imagined.

The British settlement, to the north-west of the Chinese city, is separated therefrom by the French one, and from this latter by a creek called the Yang-king-pang. Our settlement extends about a mile and a-half along the left bank of the Woosung, and is further bounded by another creek called the "Soochow," which separates it from the American position.

The houses of the European residents are substantially built, each one being detached and having its separate garden; they are entered from regular streets, formed chiefly by their own boundary walls, and within which, in addition, stand the numerous stores of silks and teas, articles demanding every care to be taken in order to avoid damp and offensive odours; in rainy weather, however, even this district is represented to become a quagmire of liquid mud.

In rear of the European stands a large densely crowded Chinese settlement, populated by the natives in the employment of the European inhabitants, and by those of them who prefer this jurisdiction to that of the Mandarins. This aggregated native hive was, further, this year overcrowded by the miserable refugees driven in from the surrounding villages, and seeking escape from the atrocities of the Taeping rebels.

Beyond the walls of Shanghai the country around is represented to be, for miles, a vast alluvial plain of the Yang-tse-Kiang, richly productive and carefully cultivated, rice fields predominating, few trees existing, everywhere intersected by tidal canals. Here, too, prevails the one and universal custom of exposure of coffined human remains, together with most of the other native evils existing within Shanghai itself, fertile nurseries of pestilence.

The meteorological observations of this station, from defect of instruments, have not been gathered in sufficient detail and system to affirm their accuracy, and Dr. Home briefly remarks that the winter climate has been experienced to be very sensibly cold, piercing north-east winds often prevailing; that the summer and autumn months are surpassingly hot, and that the rain-fall, in course of the year, is very considerable.

In the month of May the Tien-tsin garrison arrived to reinforce that of Shanghai, threatened by the Taepings, and, so far unexpectedly that no additional accommodation in the way of barracks had been provided for the augmentation, accordingly these troops remained on board ship in the river when not actively engaged in the field against the rebels, who now occupied the country around in large numbers, and had driven in the villagers in thousands for protection under the foreign settlements.

Field operations continuing, it became obviously objectionable, with a view to the health of the troops, to keep them longer on board ship, and so, in prospect of hostilities being more or less prolonged, it was decided to land them, and the important consideration pressed, the more so on account of its being at the commencement of the hot season, as to housing them as expeditiously as possible. In the month of June arrangements for this end were completed to meet the necessity by extemporizing, for the purposes of barracks and hospital accommodation, such private buildings as could be obtained. How satisfactorily, in these respects, all was effected will be seen as detailed in the following copy of the proceedings of a Board of Medical Officers, who, later in the season, were assembled to report on the mortality which had prevailed amongst the European troops; and, in connection therewith, on the barrack and hospital accommodation afforded them.

The then Principal Medical Officer, Dr. Currie, C.B., had the gratification to state his opinion that the prevailing diseases had not been influenced by any condition which had been within the power of the local authorities to remedy.

PROCEEDINGS of a Board of Medical Officers, assembled at Shanghai on the 16th October, 1862, by order of Brigadier-General Staveley, C.B., Commanding the Troops in China, for the purpose of reporting on the cause of the mortality which has prevailed amongst the European troops stationed in Shanghai, and its vicinity, during the past summer; and also on the Barrack and Hospital Accommodation of the Troops during the period referred to.

President.

Dr. Currie, C.B., Deputy Inspector-General of Hospitals, Principal Medical Officer, China.

Members.

Surgeon Rennie, M.D., 31st Regiment.
Surgeon Lamprey, M.B., 67th Regiment.
Staff-Surgeon Ross, M.D.
Assistant-Surgeon Macartney, M.D.
Staff Assistant-Surgeon Fraser.
Staff Assistant-Surgeon Macarthy, M.D.

The Board having assembled, pursuant to order, proceeded to inspect the various barracks and hospitals of the European corps, commencing with the 31st Regiment.

The Board having made a careful examination of the barracks of this regiment, is of opinion that no more accurate description of them can be given than is conveyed by the following extract from a Report by the Commanding Royal Engineer, dated 13th instant :—

" The 31st Regiment is quartered in five godowns, two of which are situated on the right bank of the Soochow Creek (a tidal stream, 400 feet wide and upwards of 18 feet deep), and the remainder on the left bank. These godowns are of the following dimensions —

" No. 1 gives to the 76 men who occupy it 1,950 cubic feet per man.

" No. 2.—Is of the same size, and is occupied by the same number of men. These godowns are on the right bank, and are flagged throughout, the floors being raised some 4½ feet above the level of the ground outside, which is itself raised some 4 feet above the natural level of the country ; the roofs are tiled, and are water-tight.

" No. 3 consists of three compartments, is floored throughout about 2 or 3 feet above the level of the surrounding ground, which is also raised above the country, and is a magnificent building for troops. It contains 240 men, giving 1,300 cubic feet per man.

" No. 4 is occupied by 68 men, gives 1,280 cubic feet per man.

" This building is three parts floored, the flooring being laid on joints fixed over the brick tea-firing arrangements, and thus being raised some 3 feet above the floor of the godown.

" No. 5 affords to the 70 men who occupy it 1,177 cubic feet per man. The floor is flagged throughout, and raised some 2½ feet above the level of the ground outside.

" These buildings are well lighted by windows and skylights ; and if I were called upon to execute barracks for troops I should without hesitation recommend the construction of similar buildings.

" The site of those, more particularly on the left bank, is far preferable to any site in the settlement, as they face the south, from which direction the monsoon blows during the hot months, and they have also the great advantage of being at a distance from any Chinese buildings.

" The hospital of the 31st Regiment consists of two godowns, which afford to each of the 40 patients a space of 1,783 cubic feet. The floors are raised, and one of the godowns was boarded, the other has also been boarded lately.

"These rooms are well ventilated; their site is about 40 yards from the river bank, and the buildings are isolated for a distance of 20 yards all round."

The Board is of opinion that the barracks, as described in the preceding extract, in regard to air, light, and ventilation, are unexceptionable, and constitute the best accommodation that it was, at the time of arrival, or is now practicable to procure in Shanghai. In respect to locality it is open, and remarkably well exposed to the prevailing winds.

At the same time the Board considers it right to state that there is a supposed objection to residences on the banks of tidal streams, which at low water leave a considerable surface of mud exposed to the sun; but if this objection be founded in fact, it applies to the most important part of the foreign settlement at Shanghai.

It is also as well to state, that there is an objection in malarious countries to living on ground floors; but in this particular instance the floors are well raised and dry.

In reference to the hospital of the 31st Regiment, which has already been described by the Commanding Royal Engineer, the Board considers the accommodation good, irrespective of which it was the only building at all suited for a hospital which it has been practicable to procure during the summer months. The description of it given will, however, show that the same questions arise in reference to locality and ground floors as have been cited in the case of the barracks.

Royal Artillery.—This section of the Shanghai garrison consists of the whole of No. 3 Battery of the 13th Brigade, and the half of 8 Battery of the 14th Brigade. The greater portion of the men are located in a large two-storied house and a smaller one adjoining it in the centre of the English settlement. The accommodation is good, and there is no overcrowding; the remainder of the artillerymen are quartered in redoubts along the line of defence in the rear of the settlement. In summer these redoubts proved hot, especially in the afternoon, but every effort was made to counteract this by ample ventilation. As they are well raised from the ground, and boarded, there is no reason but to suppose that they will make comfortable quarters for the winter.

The hospital of the Royal Artillery is a two-storied verandahed building belonging to the British Consulate, situated in an open space near the Consular residence. The accommodation is good, and sufficient for the sick of the Artillery force and detachment of Royal Engineers.

67*th Regiment.*—This corps is quartered within the walled or native city of Shanghai, and occupies the Confucian and series of smaller temples; some of the rooms contained in these buildings afford good accommodation for a number of men. There are also a number of small rooms, which had to be extensively opened out to render them habitable in summer, but which are now in course of alteration so as to make them better adapted for winter quarters; a proportion of these rooms are upper storeys.

The hospital consists of two large temple rooms, which are open and well ventilated, and have boarded floors. This hospital accommodates 52 sick, giving each patient 1,200 cubic feet.

Though the Board has not considered it necessary to notice officers' quarters of other corps, which were previously private residences, and therefore very good, yet, in the case of the 67th, it is of opinion that the quarters of the officers of this regiment are very inferior.

The site occupied by the building is low, like that of the city generally, and intersected by numerous tidal ditches of a filthy character; nevertheless, notwithstanding these disadvantages, the health of the 67th Regiment has not been worse than that of other corps.

The Board having reached this point in its investigation, proceeded to a comparison of the rates of mortality in the British land force, from the period of arrival on the 23rd April up to the 7th of October, 1862, with those extending over the same period, furnished by the Royal Navy, the French military and naval forces, also information supplied by the principal civil practitioners in Shanghai, and the vital statistics of the civil hospital at that place. The strength of the British troops during the period under report was 2,064, and the deaths 178, giving a per-centage of deaths to strength of 8·67.

The deaths on the China station generally in the Royal Navy during the same period, out of a strength of 1,411 men, having been 91, or 6·44 per cent.

In the French Navy, out of a force of 610 men, 53 deaths have occurred, being a per-centage of 8·68.

In the French military force stationed at Shanghai, 85 men have died out of 733 men, or 11·44 per cent.

In the French Mission Establishment at Shanghai, eight out of 44 European priests have died, giving the very high per-centage of 18·18.

In the two civil hospitals in Shanghai the aggregate admissions have been 436, and the total deaths 130, or 40·28 per cent. In comparison with this high rate of mortality the admissions into the English military hospitals have been 2,094, giving a death rate to the number admitted of 8·75 per cent. With reference to the mortality in the civil hospitals, the Board thinks it right to add that the admissions into them are generally of a more serious nature than those into hospitals of the public service, but it is also as well to state that the mortality this year to the number admitted into the civil hospitals has been double that of previous years.

The foregoing statistics show that a severe epidemic influence has prevailed during the period under report, and that its effects have not been confined to any particular section of the community, whether ashore or afloat; the special nature of the epidemic has been a very fatal form of cholera, which has ravaged the whole of the north of China, in the course of the summer, and which at Shanghai has been accompanied and succeeded by dysentery and other bowel affections of an exceedingly intractable nature.

Fevers of the intermittent and remittent types have also been generally prevalent; altogether, as will be seen from the causes stated, the season has been one unusually sickly and deadly, particularly as affecting the European population living on shipboard, the mortality from diseases originating in harbour exceeding considerably that on shore.

The Board, in expressing its opinion that the epidemic influences which have caused the heavy mortality amongst the troops this summer were altogether beyond the control of sanitary science, would desire also to record its opinion that, taking into consideration the physical character of the country in and around Shanghai, the Board is not sanguine of its ever proving a healthy station for European troops,—an impression deserving considerable support from the fact that, during the present summer, so trying to Europeans, the Indian troops have been comparatively healthy.

In support of these opinions, the Board has received strong corroborative evidence from the the principal naval and civil surgeons now at Shanghai.

(Signed) L. Currie, Deputy Inspector-General, *President.*
D. R. Rennie, M.D., Surgeon, 31st Regiment
J. Lamprey, M.B., Surgeon, 67th Regiment
A. C. Ross, M.D., Staff Surgeon
A. Macartney, M.D., Assist.-Surgeon, 99th Regiment
Jas. J. Macarthy, M.D., Staff Assistant-Surgeon
C. A. Fraser, Staff Assistant-Surgeon
Members.

In regard to further sanitary administration for the Shanghai garrison, the water for drinking and culinary purposes was procured from the river, and partly from old wells; new ones also were sunk without difficulty near the buildings, care being given to its purification by alum, and subsequent filtration in all necessary instances. The means of ablution were rendered as sufficient as could be, kitchens were arranged, and adapted for boiling, roasting, or baking, and the following scale constituted the daily ration:

Fresh meat	16 oz. four times weekly.
Preserved ditto	12 oz. twice weekly.
Salt pork	16 oz. once a-week.
Fresh bread	20 oz. daily.
Fresh vegetables	12 oz. daily.

In addition, a ration of rum or malt liquor was issued daily, and every morning three-fourths of a pint of coffee was specially provided for each man previous to assembling for early parade. At the end of September it became requisite, on representation of necessity by the Commissariat Department, that an issue of salt beef should be made twice weekly, and, with it, a pound of biscuit in lieu of fresh bread, an arrangement fortunately not earlier of necessity in an epidemic season. The clothing of the men was well regulated, and large knee-boots were issued for them towards the winter season; and in the then cold of the climate four blankets were allowed to each man, and his bed was placed on a wooden framework, and raised from the ground. The garrison duties were made as light as practicable, and the men appear to have obtained an average of four and five nights a-week in bed.

The conservancy arrangements were carefully supervised; a portable tub system was adopted. These receptacles were removed daily by Chinese coolies, superintended by the regimental pioneers, and were afterwards assidiously sprinkled with lime.

From the foregoing arrangements effected for the accommodation of the force, and the sanitary administration given to their welfare, it will be admitted that they were, under the circumstances of service so special, and for a time emergent, as favourably placed to meet the invasion of the malignant epidemic of cholera, which devastated indiscriminately the European and native population, spreading its ravages over the north of China, as they could well have been. As far as preventible causes were concerned, the best efforts of the authorities were devoted to the occasion, while, with regard to endemic influences, a remark by Dr. Currie, C.B., bespeaks forcibly their evils. "It will be conceded, (he says) by any one who has visited the settlement, that it abounds in all the elements of unhealthiness in an eminent degree."

KOWLOON.

In reporting upon this new territorial acquisition to the Command of Hong Kong, Dr. Home alludes to it as being bare, rocky and uneven, hemmed in at some distance to the north by a tolerably high range of hills, but perfectly open to the south, west, and east, its eastern shore gradually shelving, and having a fine sandy beach, admirably suited for bathing, its south and west water-line being abrupt, more or less rocky and precipitous. The vegetation is scanty, consisting of stunted grasses mostly, except to the eastward, where are rice fields, and now large vegetable gardens, which supply Hong Kong, and near the site of the huts which have been distinguished as the North Barracks, where these rice grounds are extensive, producing two crops a-year, the first reaped in August, the second in November. During the period of cultivation, these grounds are watered daily with liquid manure, according to Chinese custom. Shortly after the gathering of each crop, the fields are ploughed again, three conditions thus contributing to render them direct agencies of insalubrity, heat, saturation, and exposure of fresh surfaces, so impregnated, to the action of the sun.

The arrangements for the accommodation of the troops on this peninsula have, as yet, consisted merely of mat huts, pending further tests of the locality as a sanitary one. The huts are distinguished as the South and North Barracks; the former, situated along the brow of a good elevation immediately above the sea, have been given a south-west aspect, and nothing intervenes to interrupt the free course of the prevailing summer winds, tempered in their passage over a large belt of sea. At the north extremity of this range of huts stands the hospital establishment, although not on the brow of the hill as it has happened, yet on elevated ground. The North Barracks are not so favourably placed, being about three-fourths of a mile inland, and too close to the rice grounds before mentioned. The ground on which all the huts are erected is of entirely primitive rock, more or less friable. These temporary huts afforded a cubic space of 607 feet per man, patients in the hospital huts obtaining about 860 each.

As yet the health statistics of Kowloon appear to have afforded insufficient data to pronounce on its intrinsic salubrity, or otherwise, as compared with Hong Kong; this is in great degree, on account of the military parties being frequently changed in the routine of the rifle practice; fevers, as Dr. Home observes, appearing at Kowloon which may nevertheless have been engendered at Hong Kong, and *vice versa*.

Notwithstanding the insufficiency of the test as to time and adequacy of accommodation for the troops, hitherto housed only in mat huttings, Dr. Home entertains reason to anticipate that, from the situation of the peninsula with regard to prevailing winds, easy means for drainage and sewerage, the goodness of water sources, comparative coolness of nights in the summer months, and, provided the future barracks and hospital (of proposed permanent character) be constructed on the best sites, the promontory will eventually prove the most suitable sanitary position in the south of China.

At present the proximity of the rice-fields to the military position, and the offensive system of their cultivation, are the evils of greatest magnitude; the interdiction of their cultivation, and the complete drainage of them, have been urgently advocated, and this great measure has been strenuously pressed by Dr. Gibson, C.B., Director-General.

HONG KONG.

The only faulty sanitary arrangements of an important character brought to notice this year, were a defective state of the drainage of the General Hospital, which, in accordance with Dr. Home's suggestions, was to undergo alteration and improvement, and an unsatisfactory state of the sewerage, and site of the officers' latrines immediately in rear of their quarters in the Murray Barracks; the regular use of lime and more effective flushing tended much to mitigate this evil, as a temporary expedient, pending more effective means of rectification.

Victoria Peak.—In the Deputy Inspector-General's Report, a few passing remarks are made on the little sanatarium established here, at an elevation, he states, of 1,776 feet above the sea, the highest of a range of hills extending across the island from east to west. The peak is represented to be composed mainly of granite intermixed with quartz, having little depth of soil at any point, and being sparsely covered with coarse grasses. Amongst the crevices of the rocks stunted oaks, rhododendra, and a large variety of the fern tribe exist.

The small experimental sanatarium on the Peak faces the south-west, is built on a piece of ground artificially levelled, and is placed about thirty feet from the edge of a deep ravine sloping away to the south-west. The building stands about sixty feet lower than the highest point of the Peak, and is sheltered by it from the north-east and north-west winds. On a clear day the position commands a magnificent sea view of about sixty miles.

The temperature of this elevation is stated to be nearly ten degrees of Fahrenheit below that of Victoria, the garrison town.

The water supply at the Peak is represented to be abundant and pure, that for the hospital being obtained from an adjacent small well.

The greatest objection to the site is the excessive moisture which prevails during the season of the south-west monsoon, the Peak being on a level with the rain clouds, and then often enveloped for days in dense fog.

On the 4th of September of this year the establishment was opened, and a number of selected cases of invalids were sent up from the garrison, in repetition of a similar experiment made the previous year. In consequence of the inclemency of the weather, however, the sanatarium was again closed on the 31st of October.

The following results appear in totals for the respective two years:—

	Total sent up.	Improved.	Not.	Aggravated.
1861	39	26	7	6
1862	37	23	7	7

Dr. Home draws a conclusion, from the limited experiments, that the sanatarium will prove beneficial chiefly to those recovering from fevers, and not to any suffering from organic visceral disease—quite the experience of the hill sanataria of India.

THE MADRAS PRESIDENCY.

Referring to the health of the troops throughout the Command this year, Deputy Inspector-General Dr. Inglis, C.B., gives the following brief statistical Table as exhibiting the sanitary state in figures more concisely than can be expressed in words, and considering that the mortality for the period among the European portion of the Army was under 17 per 1,000 of strength, he well observes—" it may be inferred that the sanitary means adopted for the preservation of health and limitation of mortality were not unsuccessful."

Average Strength of the whole Force	12,531
Total of Admissions to Hospital	16,233
" Discharged therefrom	15,793
" Died	212
Average Daily Sick for the year	778
Percentage of Deaths to Sick treated	1·26
" of average Sick to Strength	6·20
Proportion of Deaths to Strength per 1,000	16·91

The very reduced rate of mortality this year may satisfactorily be taken as indicating progressive improvement in the local conditions, affecting health in this climate, by a now-a-days carefully observed system of sanitary rule. And the Deputy Inspector-General further remarks that it is to be hoped the unrelaxed efforts of all whose duty and interest it is to maintain the health and efficiency of the troops will in due course produce such effects that even casualties from cholera will occupy a comparatively minor place in the Army Returns. They this year numbered 46 of the whole 212 deaths.

In general remark Dr. Inglis states that, although sanitary improvements throughout the Command have been advancing, much still remains to be carried out in this direction, and he, meantime, more emphatically advocates the institution of gymnasia at Indian Stations, want of sufficient healthy physical recreation being a condition at all of them. He urges the measure in feeling convinced of its adaptation to the soldier's Indian service, and from his own previous regimental observation at Aldershot, where, after his men had passed through a course of this training, he could pronounce that nothing can tend more to develope the physical attributes so essential to the proper conservation of health, combined with acquisition of nervous and muscular capabilities for the adequate performance of the soldier's duties in camp, field, and quarters, than proper and systematic courses of training such as are obtained by the the institution in question.

The following specialities of sanitary observation appear in the local Reports of Stations:—

Fort St. George (Madras).—Dr. Huntly Gordon, Surgeon-Major 69th Regiment, states that cholera alone disturbed the hygienic status of the year. Four cases of this disease occurred in rapid succession among patients of his in the General Hospital, and being beyond doubt, as he thinks, of intramural origin. The incident may well be looked upon as sadly confirmative of the anticipations of Inspector-General Dr. Beatson, under whose protest, when Principal Medical Officer of Queen's Troops in this Command a few years ago, the extension of this General Hospital was, nevertheless, decided upon in opposition to his strong representation of its bad site, and the anomaly of the military patients being provided for within the same establishment as occupied by mixed classes and races of civilians.

On this unfortunate occasion of an outbreak of cholera within its walls, the regimental sick were at once removed and sent to be accommodated in the banqueting hall of the Government House enclosure; this temporary measure was most propitious, and no more cases followed.

Bangalore.—Cholera, in partial occurrence, visited this Station, distinguished usually for salubrity ; but there appears to have been no assignable cause, few local agencies, as Dr. Jephson, King's Dragoon Guards, observes, under the carefully carried out sanitary system of the Station, being in operation at any time to disturb the health of the troops.

Secunderabad.—The sanitary conditions of this large and important Station during this year are alluded to by the Regimental Medical Officer serving there as having been exceptionally favourable to the health of the European troops.

Dr. Fraser, Surgeon-Major 18th Royal Irish Regiment, reports that malignant dysentery, hitherto the very especial evil of the place, had become almost extirpated as regards his battalion, and that only one death in 103 admissions had taken place, bespeaking a very modified character of the disease, and not less an advanced system of military hygiene practised. He states in further reference to the fact that the constitutions of the men had become invigorated, generally, by the years of rest and relief from the hardships of the field and crowded camps, by the occupation of improved barrack accommodation and by the provision of better food, &c.

Surgeon Kellie, of the 17th Lancers, also reports favourably of the hygienic standard of his corps. As a drawback to the combined efficiency of the regimental sanitary arrangements, he points strongly to the system of picketing the troop horses in the open air, and the consequent want of protection for the men from solar exposure, a circumstance which necessitates their earlier reveillé, and deprives them of an hour's sleep at a time the most refreshing. This system, although under much less trying circumstances of climate, holds also at Bangalore ; and Inspector-General Dr. Beatson, in his time, amongst other eat measures of sanitary reform in this Presidency, advocated the erection of able sheds for the European cavalry as an important necessity—one which has been alluded to in Reports of previous years.

The satisfactory sanitary state of the Royal Artillery at this Station may, in great part, be inferred from the following statement of Assistant-Surgeon Cushman: —" The diseases are in main part of the soldiers' own making, and, therefore, should be the more preventible ; drunkenness and debauchery being the great agents, the service, in comparison, much less so."

Trichinopoly.—On the amalgamation of the local European Regiments this year with those of Her Majesty's British troops, this Station has come under report. Dr. Scott, Surgeon of the 105th, expresses himself emphatically as to the very objectionable position of the barracks in proximity to the native bazaar, which is fertile in sanitary dangers difficult to be dealt with, and being within close sphere of the troops, large numbers of cattle, he states, are concentrated within a limited area, on which a slaughter-house exists, and the ground around it is saturated with blood, fouled with offal and dung-heaps, public latrines under no conservancy system, and within 200 yards of the barracks, adding to pestiferous complication. The barracks appear to be only of temporary character. Meanwhile the above pestilent conditions are well known to the local authorities, and Dr. Scott reports that "reform is promised!" Scarcely could a greater Augean state press for it than his abstract picture evidences.

Bellary.—Surgeon-Major Dr. Macbeth, with good sanitary reason, inveighs against the lot which has consigned his regiment, the 74th Highlanders, to a continuous service of no less than six years at this quarter, amongst the most trying of the Stations in the Madras Presidency, through reason of that persistent dry heat which, more particularly with a prevailing parching east wind, keeps the circulation almost perpetually in a state of preternatural excitement, strains the nervous system, influencing injuriously the constitutions of the men, predisposing them to succumb under malarious causes, and rendering them less capable of rallying therefrom. This fact is prominently expressed in the invaliding of the regiment this year, it having been necessary to send no fewer than 96 disabled men from the Station.

The corps suffered much from bowel affections in course of the year, and was visited by an epidemic of cholera which, out of 29 seizures, proved fatal to 15. The latter disease appears to have originated amidst a great native festival at an ancient Hindoo city about forty-six miles from the Station, and to have thence radiated over the country, reaching even Ramandroog, the hill sanitarium, subsidiary to Bellary, thirty-six miles distant from it. This elevated site, 3,400 feet above the sea, a cool and invigorating retreat for sufferers by the ardent climate of Bellary, is the one and sole indemnification for the tour of a regiment's exhaustive service at that Station.

Kamptee.—Dr. Murphy, Surgeon-Major 91st Regiment, affords the following information of topographical and sanitary character in relation to this more northern station of the Madras Presidency.

It is situated in 21° 16′ of north latitude, and 79° 46′ of east longitude, equi-distant from the east and west coast of the Great Peninsula of India, and about 400 miles from either; it is 900 feet above the sea level. The climate, as estimated by its mean temperature, corresponds to Humboldt's equatorial zone, and its influence on the health of Europeans is doubtless prejudicial; at no period of the year can out-of-door exercise be taken with impunity between the hours of eight a.m. and four p.m., the high temperature of the hot months, and the humidity of the wet season predisposing to disease; and although the colder months are, during the mornings and evenings, agreeable for exercise, there is not a sufficient reduction of temperature, nor is it of sufficient continuance, to render them invigorating.

The diseases of the district are chiefly of the zymotic class, fevers, cholera, dysentery, and diarrhœa, such as might be expected to be met with in a flat, heavy-soiled district in a tropical climate, deprived of the invigorating influences of a mountain neighbourhood, or the tempering effects of proximity to the sea, and with a soil of a highly malarious character, absorbing and retaining both sunheat and moisture.

The cantonment occupies an extent of four miles along the right or south bank of the Khanan river, which runs a tortuous course from west to east, and at Kamptee passes over a sandy and rocky bed: except in the rainy season, the river is fordable and free from mud. The soil of the neighbourhood consists of clay and the regur, or cotton soil, the common black earth of this part of the Deccan. Water is found at a depth of thirty or forty feet. The country around the cantonment is flat and destitute of wood, is very productive, and there are no neighbouring marshes. Cotton, corn, and nearly all kinds of European vegetables can be grown. The fruits consist of oranges, limes, citrons, plantains, guavas, mangoes, &c.

The European Infantry Barracks are injuriously surrounded by a wall; they consist of ten houses, extending east and west, and are not elevated; on the "windward" side (the south-west) the ground is low and liable to become swampy. Dr. Murphy pronounces their site not one favourable to health, that their general construction is not good, and their arrangement bad, each being placed end on, instead of broadside to the prevailing winds. The arrangements for the year provided for an average of sixty-nine men occupying the barrack rooms, at an average monthly cubic space of 1,087 feet per man. The ventilation, considering the disadvantageous position of the barracks as to the prevailing winds, is reported to have been sufficient to preserve the air within pure, and its stagnation by night was obviated much by the use of punkahs. Each barrack-room has near it its own ablution house, and a swimming bath was completed this year for the men who likewise derived the advantage of bathing in the river by regular parades, during the months of April, May, and part of June.

The latrine system of the barracks has been represented as a very positive offence, one of long standing, and has obtained reiterated representation. Dr. Murphy had strongly decried the position of these accessories, and a new one on an improved plan was constructed this year, and two others have been commenced; his protest against the site of the old ones was in their being to *windward* of the barracks. A committee was assembled in July to decide on the site of more new ones, and he had learned that the decision was to construct them on the former sites—a sanitary perversity difficult to account for without special reason shown.

Although the barrack inclosure has been improved by drainage, further measures of the kind are represented to be necessary, and as the rain from the roofs had hitherto been allowed to fall close to the walls of the buildings, it appears strange that the common hygienic expedient of paving and flagging had not been resorted to for prevention of such evils.

On the rationing of the troops at this Station, Dr. Murphy reports the articles of diet to have been sufficiently varied and nutritious; the supply of fresh vegetables, however, appears to fail at seasons, and on an occasion in May he recommended the substitution of dholl, a valuable pulse, and one always procurable in India. The recommendation was made to his commanding officer, and by him submitted to the division authorities, with an almost incredible result, ironically stated by Dr. Murphy—"It was contrary to orders to make a change in the dietary;" the dholl, however, was occasionally issued, and he recommends that dried peas and cheese, both of which might be preserved, he states, with ordinary care, should be issued with the rations when fresh vegetables are scarce.

There are skittle-alleys at the barracks, much used by the men. Gymnasia were established this year, and during the cold season, were also much availed of. Theatrical performances took place frequently in different companies of the regiment, affording much occupation and amusement. The soldiers' reading-room was kept well supplied with papers and periodicals, and furnished with draft and chess-boards, &c., all pleasing resources in the monotony of the cantonment life of the troops.

Reporting on the diseases of the year, Dr. Murphy represents those of the zymotic class to have been peculiarly prevalent, through climatic influences chiefly, the year having been an exceptional one in many respects, in the longer continuance and greater intensity, than usual, of the hot seasons, in the scanty fall of rain at the commencement of the south-west monsoon, and in the total fall being less than usual. Cholera of a very fatal form prevailed in September. The latrine exhalations, which, during the south-west monsoon, are wafted directly into the barrack-rooms, Dr. Murphy had no doubt were highly prejudicial to the health of his regiment, and he considered it very unfortunate that the Committee before alluded to, should have selected the site of these old latrines for the erection of others which had been commenced.

The site of the regimental hospital is reported to be bad, low, too close to the bank of the river, and the ground near it is much intersected by beds of small streams, constituting the drainage courses towards the river. Although the average number of sick in hospital obtained the reasonable cubic space of 2,311 feet per patient, the establishment was insufficient to meet the necessities of the cholera prevalence, and a barrack-room had to supplement the demand. This was occupied from 4th September to 20th October by the more ordinary and surgical cases; by this means overcrowding of sick was avoided.

Improved drainage of the hospital had been frequently applied for, and, after repeated representation, its latrine was reconstructed and rendered satisfactory. The kitchen required reconstruction, a service which had also been urged.

Dr. Murphy found that very many of the cases of cholera, during the epidemics, occurred in men under hospital treatment, and that several relapses of fever and dysentery also took place within the building; the causes, he considered, were partly the irremediable ones of climate, but partly due also to the evil of the hospital latrine before it was remedied by reconstruction.

The most satisfactory information conveyed by Dr. Murphy's Report is that the old quarters for the married soldiers, small, badly ventilated, and placed to leeward of swampy ground, are being replaced by new ones on a better site, six of which have been constructed this year; other six have been commenced.

Rangoon.—Surgeon-Major Best, 68th Regiment, has to observe of this Station that it has been annually improving, marked good effects upon its sanitary state having been perceptible for the last three or four years by the continued clearing of jungle, whilst cultivation has been extended in the vicinity of the cantonment. The proof has been evidenced in the reduction of malarious fevers, and Dr. Best expresses that it has never been his experience to meet with milder forms of disease than he now does at this Station, and he attributes much of this fortunate condition to the excellent sanitary arrangements in the construction of the quarters of his corps, which he pronounces never to have been healthier than during this year.

THE BOMBAY PRESIDENCY.

In the prospective sanitary interests of the European troops, Mr. Gammie, the Deputy Inspector-General, announces as follows:—

At Aden.—Complete accommodation for a larger garrison is in course of erection, and, it may be inferred, under the advantages of the latest structural improvements that can be adapted to the locality and nature of the climate.

At Mhow.—A new hospital for the Cavalry Regiment has been ordered, and new barracks for the same are nearly ready for occupation. A new hospital for the Infantry Regiment stationed here has also been sanctioned.

At Neemuch.—A new Infantry Hospital has been recommended as of emergent necessity, and it was hoped would be expedited.

At Nusseerabad.—A new hospital for the Infantry had been advised by the Commander-in-Chief, together with enlargement of the Artillery Barracks.

At Mount Aboo.—The Northern Sanatarium, barracks for 120 men were in process of construction.

At Asserghur.—Barracks for 100 were nearly completed, and the old mosque would be available for separate accommodation of the soldiers' families.

At Ahmedabad.—Additional accommodation for the Artillery, and permanent quarters for thirty-six soldiers' families had been advised.

Mr. Gammie expresses much satisfaction with the "dry" system of conservancy now being adopted in this Presidency—similar to that so generally approved in Bengal.

He states that his Excellency the Commander-in-Chief of India had instituted a new system of cooking, in which the troops in India, generally, were themselves to be instructed; and this, as a trial measure, was already under experiment in the Bengal Presidency. However expert the native cooks have been hitherto in their rough-and-ready way of serving the European troops, good kitchen ranges, and the application of the improved science of the day, have still been greatly advocated by medical officers.

The Stations under the Bombay Presidency which have been the more conspicuously reported upon this year in the regimental annual sanitary documents have been the following:—

Aden.—Assistant-Surgeon Dr. Ekin, 4th Foot, reports that after an experience of nearly three years, he considers the climate a good one, at least for those who do not expose themselves to the sun, which is the great cause of continued fever—the chief disease among Europeans. In consequence of the mildness and softness of the wind in the cool season, invalids suffering from bronchitis and dry irritable state of skin, he thinks, might be benefitted much by a residence here. The climate is not found sufficiently bracing at any time to completely remove the relaxing effects of several hot seasons' residence, and, considering the monotonous life of the soldier here, he thinks that European troops, as a rule, should not be kept more than two hot seasons at the Station. Describing the peninsula of Aden as on the southern coast of Arabia, Dr. Ekin represents it as fifteen miles in circumference, being connected to the mainland by a narrow neck, which is evidently a raised sea beach of volcanic formation, consisting of lofty and precipitous hills running in a somewhat circular direction, and partially enclosing an amphitheatre or crater, in which the town and military cantonments are situated. The soil, he states, consists of the detritus washed from the rocks above. Water of very fair quality is found in some of the wells near the town; but as these approach the sea it becomes brackish, and fit for purposes of ablution only. There exist also tanks capable of holding 20,000,000 gallons of rain water. The vegetation of the peninsula is very scanty, consisting of a few stunted trees and plants. All supplies for the troops have to be obtained elsewhere. Excellent fish is procurable along the coast.

The "Camp Barracks" are close to the sea, at an elevation of about ten feet above it, and have an easterly aspect. The site is pronounced a good one. The "Isthmus Barracks" consist of two upper story rooms built on arches and fronting westward. These, he reports, are excellent barracks in every respect. The hospital accommodation for the garrison has been defective and limited—a state which, with the general arrangements to meet an increase of troops, will, no doubt, be rectified.

The water for the troops has been supplied from the Aden wells, and has been as good as can be procured from this source. It was a little brackish, but Dr. Ekin had not been able to trace any disease to it. Three gallons of what is called "sweet" and two of "brackish" water were supplied daily for each man. In the wells the saline constituents are observed to vary very much, and in some of them a large proportion of nitrates and lime and magnesian salts have been traced. The solid contents of these waters vary from 99·09 in 10,000 to less than 7·5.

The following was the daily ration, viz.:—Meat, 1 lb.; bread, 1 lb.; vegetables, 1 lb.; rice, 4 ozs.; sugar, $2\frac{1}{2}$ oz.; tea, $\frac{5}{7}$ oz.; ($\frac{10}{12}$ black and $\frac{5}{21}$ green); and suet, 1 oz. The fresh meat proved very good, and consisted of beef five times, and mutton twice a-week. The bread was prepared in the Government bakery, and had also been good. The vegetable supplies were, however, of very inferior quality, consisting of carrots, radishes, onions, blundies, turries, brinjalls, a few sweet potatoes and pumpkins, the last-named forming a large proportion of the ration. A much larger allowance of potatoes, and of the best quality was desired. No good Bombay potatoes were obtained, small supplies of these for the sick only being received during the year.

The most important disease that occurs at Aden among Europeans is shown to be continued fever. It appears to be caused in great measure by the ardent heat of summer, and those who arrive at the beginning of or during the hot season are more predisposed to its attacks than others.

There was only one admission of intermittent fever this year in the wing of the 4th Regiment, while in 1860 there were 237, and in 1861, 54. This shows, Dr. Ekin observes, how completely the miasmatic poison, which freely entered the system of these troops when in Gujerat, their previous station, had disappeared, and how free Aden is from such malaria, in consequence of its scanty vegetation and moisture. Cholera rarely pays the place a visit.

The improvement in the health and appearance of the men of the 4th at Aden has been maintained this year, bespeaking so far its advantage over many Indian stations; for, although some men remained pale and sickly-looking, they were the few exceptions. The admissions to hospital were less than during the previous two years, as in 1860 the strength was 348, and the admissions amounted to 763; in 1861, the strength 455, and the admissions 620; while in the past year, there were only 495 admissions in a strength of 466. Such results would evidence sanitary advantages of no inconsiderable degree, as proved in this the well-tested instance of a malaria-imbued corps from Gujerat.

Colaba (*Bombay*).—Mr. Hanbury, Surgeon 33rd Regiment, in sketching the topography of this promontory, represents most highly the sanitary condition of his corps stationed here, as follows:—"The regiment enjoyed a very high standard of health during the year, and I never saw troops at home or abroad whose exemption from serious disease of almost every denomination was more complete. The average strength was 428, the average daily sick 15·72, and of the nine deaths, three only were connected with the Station, namely, one the result of hepatic abscess, and two of the cholera endemic to Bombay. These facts call for more than passing attention; they afford positive testimony that the climate of Colaba *per se* is not unhealthy, which any number of negative statements to the contrary cannot controvert, inasmuch as climate in regard to its influence on endemic disease at least is, within very narrow limits, a fixed quantity from year to year. The results of the experience of last year differ notably from those of former years, but for the causes of this difference we must look to conditions of life less definite than climate, and perhaps for that very reason more under our own control. My own observaton and enquiries in this direction have led me to the conclusion that improvements which have been effected within the last couple of years in the drainage and ventilation go some way to account for the high state of efficiency which has distinguished the regiment; but that exemption from disease must chiefly be referred to the absence of that overcrowding in barracks which, with the view to lighten the heavy duties of the men, has been allowed, I fear, to become the rule, and not the exception in Colaba. The accommodation of barracks and patcherries would appear from the official estimate to be barely adequate for 450 men; the number of occupants during the year did not excee d428, and, although the soldier was on duty one night in three and a-half, the troops have, as we have seen, continued throughout in excellent health. Let these facts be borne in mind when it is again contemplated to take up fresh ground for barracks in Colaba, or to abandon the place altogether; and let it be also remembered, that if regiments have suffered a sad mortality, or left the station broken in health and inefficient, that the barracks were made to accommodate an average of 580 men, and, for months together, more than that number.

"A small daily or annual range of temperature, a moist state of the atmosphere depending on the insular position of the station, prevalence of wind from south-west and west at one season, with heavy monsoon rains and prevalence of northerly winds at another, are the chief characteristics of the climate of Colaba, and, contrary to all former experience, it has this year proved eminently healthy.

"Colaba represents a tongue of land about two miles in length, extending from the fort in a southerly direction, and separating the harbour from Black Bay, of trapite or greenstone formation, the rocks of which having been undergoing decomposition for ages, constitute, with more or less recent marine deposit, the soil of the promontory. Its general level above the sea at high water varies from ten to twenty feet, and with little assistance from art, its drainage, from the formation of the ground, works efficiently, and no swamps or marshy spots exist. Trees of the ordinary tropical kind represent almost the only vegetation, and the locality is so thickly populated that no space is left for the cultivation of crops. Notwithstanding the notoriously unhealthy character of Colaba, its position would appear, *a priori*, to be a most favourable one, for it is more freely exposed to the sea breezes than other parts of the island, and is almost the only locality which possesses a good natural drainage. If the results, as expressed in disease and mortality, have hitherto proved at variance with this estimate, the causes will probably be found rather in the over-population of the place, and overcrowding of the barracks (the latter of which has been, I believe, the rule and not the exception) than in locality and climate.

"The barracks face the west and are built in two lines, one behind the other, overlooking Black Bay, and standing 10 to 15 feet above high water mark; the ground rises gradually behind them to the officers' lines, whence it falls abruptly into the harbour on the eastern side. The position is, I consider, healthy, for it proved so in a very conspicuous degree this year, and in face of this positive fact, the position should not be lightly abandoned in deference to the large amount of negative testimony that may be urged against it."

Nusseerabad.—Of this station, which has of late only been taken into occupation by Her Majesty's British troops, and the extempore circumstances of accommodation as yet available for them, Surgeon-Major Dr. Marlow, of the 28th Regiment reports that the sanitary state of the buildings and out-offices was maintained in as satisfactory a state as their structure and conditions would admit; but much is evidently wanting, with the agency of means and time, to provide for the European soldiers' hygienic comfort in barracks and welfare in hospital, such as should be secured to him at this a station ordinarily of much climatic trial and one, as Dr. Marlow remarks, subject to nearly annual and almost always sudden visitations of cholera. He states that there can be no doubt of the scorbutic tendency in the men towards the end of the hot season, and their consequently additional proneness to the diseases prevalent in the season of malaria more especially, and he attributes a "well known intractibility of syphilitic affections at the Station" to the same blood-degenerated condition of constitution.

Dr. Marlow points to sanitary advantages obtainable on the neighbouring hill of Taraghur, limited although they be; of this site he writes—

"Although the diseases to which troops are chiefly liable at Nusserabad, viz., fevers, depend mainly on climatic causes, and are so far unavoidable, there can be no doubt but that something might be done towards maintaining the efficiency of European soldiers at the Station, by taking every practicable advantage of the little hill of Taraghur, about fifteen miles from camp, in a north-westerly direction, the only approach to a sanatarium in the neighbourhood; with accommodation for 100 men during the hot, rainy, and malarious seasons, there is reason to believe that by transferring parties of the debilitated and weakly soldiers of a regiment to the hill, from time to time, great benefit would accrue. Many men predisposed to attacks of fever and other zymotic diseases, would thus gain sufficient strength to enable them either to tide over the malarious season altogether, or the change would give them a better chance of recovery from the various maladies incidental to climate, or those arising from other causes. The hospital would not be so crowded from July to the end of October, considerable invaliding would be avoided, and many lives might be saved.

"The saving of expenditure arising out of these three circumstances alone, ought to be sufficient to warrant some present outlay which would most assuredly prove to be certain economy in the end.

"The experience of the last three years has fully shown that good shelter is necessary in order to withstand the changes of weather between the middle of March and the middle of October. Tents will not do in the hot months, as the height of the hill is not more than 1,200 feet above the level of the plain, and not out of the reach of the dust storms. In the monsoon tents would be con-constantly blown down, and always wet or damp, even if thatched.

"At present there is accommodation in a dome-roofed building for thirty men only; the cubic space is insufficient for this number, however. But building-stone exists in such abundance that ample shelter could be erected at comparatively little cost.

"The great advantage of sending men to Taraghur for change is considered to be this:—

"From observations made on the hill it would seem that the average temperature of the air during the hot season is nearly ten degrees cooler than that of the plains, and the nights are almost invariably comparatively cool, or cold enough to admit of refreshing sleep—a luxury very difficult to obtain in the plains—and which alone is of immense importance to debilitated constitutions. Further, there is reason to believe that the site of the sanatarium, although not altogether above the influence of the malaria generated below, is so far out of its reach that comparatively few cases of remittent or intermittent fevers originate on the hill. The climate is decidedly a dry one, except during the south-west monsoon, when the fall of rain does not appear materially to exceed that of the plains. The hill is freely exposed to the wind from whatever quarter it may blow.

"There is an abundant supply of most excellent water. A good road is much wanted from the base to the summit of the hill, and above all a cleared space for amusement within the fort would take much from the monotony of a protracted sojourn on the hill, at present the debilitated men soon become extremely weary of the sameness of the life."

However inconsiderable the sanitary advantages of this hill may be esteemed, it has at least the very desirable one of being in an immediate neighbourhood to the present station of an European regiment, and might well be maintained of sufficient accommodation to meet the hygienic interests of the men at any season of emergency; although the views of the military authorities do not tend in favour of its establishment, those of his Excellency the Commander-in-Chief being to confine the expenses of erecting barrack accommodation to Mount Aboo, as being the only sanatarium in the northern section of the Bombay Presidency worthy of any considerable outlay; he has, however, consented to the present dome-roofed building on the hill being improved as regards light and ventilation, in order that from twenty to thirty men may enjoy such change as Taraghur will afford when Aboo is inaccessible during the monsoon."

Of *Mount Aboo*, the Hill Sanatarium, no especial statistics of health of material value, are shown in the only Sanitary Report of this year which has been received. This document appertains only to a detachment of the 56th Regiment from Deesa, of about fifty in number, under charge of Assistant-Surgeon Stafford. It remains matter of regret that ways and means have not yet suited to secure the best advantage of this sanitary retreat from the arid plains of the Deesa district; new barracks on a better site of the hill are the important desideratum, and such a site appears not to be wanting, as an elevated one called Gundummuck (a space of table land) is available, and the intention of its appropriation for the purpose is expressed. Meanwhile the results of the year under report, as connected with the old buildings in occupation, have been somewhat the reverse of sanitary, as it is shown that the admissions into hospital from fever alone (intermittent) equalled the average numerical strength of the detachment, and Mr. Stafford gives his opinion that the direct origin of the disease was from local miasmata after the rainy season, and the rankness of vegetation influencing the bad site chosen for the old barracks, low laying in a ravine of the hill, with defective drainage for the water-shed above. To mitigate the prevalence of febrile disease it was found necessary to move the men into camp in the month of November, when the site chosen for pitching the tents was the plateau of Gundummuck; the results of this expedient were, as to be expected, satisfactory.

BENGAL PRESIDENCY.

The Stations occupied by European Troops in the Calcutta Division, including Calcutta, Dum Dum, Barrackpore, Chinsurah, and Berhampore.

THE barracks for the location of European troops at Calcutta are contained in Fort William, which is situated on an extensive plain somewhat less than a mile from the city, and within a few hundred yards of the river Hooghley. The elevation of the fort is but little above that of the river. Numerous trees present an agreeable and unquestionably a healthy feature in the locality which with several drives tend to diversify the level character of the plain and slight gradient of the glacis upon which the fort stands. This large maidan is clothed with grass always kept short, and certainly clean, considering the supervision that can be applied to it, and the great number of natives who have access to it, who recognize no principle of sanitation, and not always even decency, in the localities they select for their matutinal requirements.

The men's barracks in Fort William are denominated "The Queen's," "The Dalhousie," the North and South Barracks, and two bomb-proof casemates. The latter, however, from being hot and uncomfortable, are not occupied by any portion of the permanent garrison at present. With the exception of the bomb-proofs, which are one-storied casemates, the barracks are from two to four stories high, and afford a cubic space per man varying from a minimum of 1,200 feet to a maximum in the Dalhousie Barracks of nearly 2,000 feet. The superficial area, however, does not disclose quite so favourable a state of things. In the Dalhousie Barracks it is given as 111 square feet per man, but in the North Barracks, it is only 66 square feet to each. The four buildings, exclusive of the bomb-proofs, are calculated to provide space for about 1,200 men with the regulated proportion of families. The ventilation is considered good, being in some instances in the roof and in others by circular apertures in the walls under the cornice, and, as the doorways are large, ventilation is extensively obtained. Ample accommodation is provided for officers in the barracks set apart for them; namely, "The Staff," "The Rampart," and the "Royal Barracks."

Ablution-rooms and urinals are situated at the ends of the buildings, on each story in some, but only on the lower story in others, to which latter arrangement exception has been taken by Medical Officers, and remedies proposed. A swimming-bath has been recently provided for the European soldiers.

The privies are good, admitting of the removal of the soil pans from outside beneath the seats, to be carted away when filled. Surgeon Reid of the 92nd Regiment complains that the proximity of the latrines to the cook-houses is very objectionable; he describes the latter as good and roomy, but observes that at times the effluvia from the privies render the cook-houses offensive. He states, however, that a committee, under the presidency of Deputy Inspector-General of Hospitals Gordon, C.B., was convened to remedy this evil, which must be admitted to be a great one. In India, where flies abound, their unavoidable contact with the privies at one moment and the meat the next would be highly objectionable.

The small elevation of Fort William presents an insufficient fall for drainage, but it seems that this difficulty has been, or is about to be, remedied in a great measure by providing a slope of at least one foot in two hundred by a system of covered drains supplementary to the open ones. The cesspools would appear to have been heretofore defective, and as the drains mainly open into the cunette, or wet ditch of the fort, a great deal of the efficiency of the drainage depends upon it.

The cunette which empties itself into the river Hooghley is said to be faulty in original construction from variation in the sectional area, causing a difference in the velocity of its contents at various parts, thereby occasioning silt deposits, which are very offensive and are prominently mentioned in disapproval by Medical Officers. It is explained that, for different reasons, chiefly the expense, a perfect remedy is not readily attainable for this state of things.

The water supply to Fort William has always presented a difficulty, it is chiefly obtained from tanks for drinking purposes; that from wells is not so good—it is said to be brackish. If practicable, the water should be conveyed from a suitable though possibly distant source, through pipes. Various remedies, more or less extensive and proportionately expensive, have been proposed to meet the wants of the garrison; and it is hoped something effectual will be done in this respect, as it seems generally conceded that a good water supply can be procured, if the necessary expense is incurred.

The rations are reported to have been of excellent quality throughout the year. Mutton was only supplied once a week, fresh beef was issued on the other days. Fresh vegetables were always supplied in sufficient quantity and of good quality.

The duties have not been severe, consisting of ordinary parades and drills morning and evening, when the weather permitted. The night guards did not weigh heavily upon the soldier, affording him from 5 to 6 nights in bed.

The recreations consisted of the games of cricket, hand ball, skittles, quoits, &c. Theatricals were also extensively indulged in: the theatre, however, is represented as too small. A soldiers' reading-room has been established, which appears to have been much appreciated and well attended; soldiers' workshops were opened, which afforded their quota of occupation and profit.

The General Hospital, as it is designated, consists of three buildings with outhouses; the centre is an old but good building, and is entirely appropriated to non-military patients. One of the wing buildings is for the use of the troops in the fort, and the other is appropriated for a female hospital and for the residence of nurses. The General Hospital is situated about a mile to the south and east of the fort; the wing set apart for the accommodation of the sick of the garrison is three stories high; the ground floor is occupied by stores, and the 1st and 2nd by patients. The 1st floor is 148 feet long, 18 wide, and 12 in height. A verandah runs along each side, 11 feet in width and of the same height as the wards. The ablution-rooms and privies are at the eastern end. The 2nd floor is nearly similar to the 1st; each provides accommodation for 38 patients, affording 1,500 cubic feet to each. The Surgeon of the 92nd Highlanders remarks, in his Annual Report, " With regard to the hospital accommodation, I can only say it is most wretched, and I most fully concur in all that has been said against it in previous reports. The building is very old, it is not large enough, the wards are narrow, and the roof low; and immediately in rear of it there is a large and filthy stagnant tank, which in the rains, when it overflows, lets off its superfluous water by drains which run through the Hospital compound."

Forts would appear to present few advantages in a sanitary point of view in India over the ordinary conditions of barracks in stations. The power of, in a great measure, isolating a fort during the prevalence of contagious disease in the vicinity of it, comprises probably the chief advantage, but this is vastly outweighed by numerous conditions less favourable to health when contrasted with cantonments as ordinarily constructed on an open maidan. In Fort William, for instance, the aggregation of so many human beings, European and native, involving so many circumstances of provision, is a cardinal objection. The numerous buildings and their proximity, by which temperature is actually augmented and ventilation impeded, are architectural arrangements insanitary but unavoidable. These buildings, heated by the sun during the day, retain caloric throughout the night; and built however carefully to obtain the full force of the prevailing breezes, it is difficult to obviate buildings shutting out others, as is the case in Fort William, the South Barracks intercepting the south breeze from the North Barracks. Again, in some of these buildings space has been obtained at the expense of sound sanitary principles, as by constructing many of the barrack-rooms so wide that the men lie five or six deep, the emanations of those to windward are borne to the men to leeward. Fort William labours under a disadvantage, moreover, in being so close to Calcutta, as of course no system of prevention can obviate the exposure of the men to the means of debauchery and other conditions adverse to health encountered there.

Dum Dum.

The military station of Dum Dum is situated about 7 miles from Calcutta; the river Hooghley is about 3½ miles to the westward of it. Dum Dum was at one time the head-quarters of the Bengal European Artillery. Of late years it has been very irregularly occupied, and during 1862 especially so. The cantonments are very flat, and lie exceedingly low; during the south-west monsoon, when the river rises, the station is said to be little more than two feet above its level, the result is, that drainage is very defective, so much so, that the ground at this period is always partially under water. Rice cultivation is represented to add to this state of things, as it has heretofore been carried on to the bounds of cantonments. The soil is alluvial clay; the vegetation is most luxuriant, becoming rank at the close of the rains. Trees abound, consisting chiefly of mangoes, bamboos, and bananahs; low jungle is likewise met in the neighbourhood.

The climate is described as somewhat cooler than Calcutta; it is very moist, mists hanging over the surface of the earth morning and evening at certain seasons. The rains generally begin at the end of May and continue to October, the cool season setting in in November and terminating at the end of February. The climate of the stations in the vicinity of Calcutta, *cœteris paribus*, could not be expected to differ very much from each other. All of them are low and damp; the somewhat less sickness and mortality considered to prevail in Barrackpore than in the others is attributable to local sanitary conditions, apparently recognised by different Medical Officers. Intermittent and remittent fever, as well as dysentery, are very prevalent at Dum Dum, and cholera has frequently, and of late years, committed sad ravages at this station. This has been ascribed by some Medical Officers in their estimation to have been influenced not a little by overcrowding, and from the occupation of the lower floors of the barracks as sleeping rooms. Suggestions have been made to use only the upper floors as sleeping apartments, and to avoid overcrowding, the adoption of which suggestions is expected to be attended with better results as to the salubrity of the station. There would seem some reason to predicate less sickness and mortality under the foregoing and other judicious sanitary precautions, as, in spite of the unhealthiness that has been associated with Dum Dum, a somewhat more favourable reputation attached to it before its occupants were of such a heterogeneous character, and placed in it in such numbers as has been the case on occasions of late years.

The barracks consist of the permanent and temporary. No recent detail of the accommodation and arrangement having been received, allusion will only be made in a general way to the permanent structures, which in the year under review appear alone to have been occupied by Europeans. There is accommodation in the permanent barracks for 1,649 noncommissioned officers and men. They are built of solid masonry, two stories high, with flat roofs; the floors are raised about three feet from the ground, and are made of Chunar stone over high flues. The stone is said to render them damp in the rainy season. In each story there are three rooms—one large room, and two small ones at each end. The external walls of the verandahs are the principal walls of the buildings. Air and light are admitted through jalousied windows placed in the exterior walls of the verandahs. There are numerous air-holes near the ceilings of the lower rooms; 6 skylights are constructed in the ceiling of the upper story, and 16 in the ceiling of each of the verandahs. In addition, several metal tubes extend from the lower rooms to the roof, which give exit to the foul, heated air. The cubic space per man in the permanent barracks is computed at nearly 1,200 feet, while the superficial area is about 68 square feet.

The hospitals are half-a-mile from the barracks, and comprise buildings specified as permanent, and iron-framed temporary structures. The principal building is one-storied and flat-roofed, affording 1,200 cubic feet, and a superficial area of 78 square feet to each man. The ablution and bath rooms are good; the cook-houses are similar to those ordinarily in use in India. The privies are supplied with iron pans, which are removed from underneath the seats from outside, and the contents carted away twice a day from barracks and hospitals.

The water supply is chiefly from tanks; it requires filtration, and contains a considerable amount of solid residue and earthy carbonates, with a little silica. The duties during the year have not been severe in any of the stations of the Calcutta Command.

BARRACKPORE.

The station of Barrackpore is situated on the left bank of the Hooghley, about 16 miles by road from Calcutta. It is between the 22nd and 23rd degrees of northern latitude, and in the 88th eastern meridian. The station is described as 2½ miles long, by 1 in breadth. At its southern extremity is situated the park and country seat of the Viceroy. It extends down to the river bank, upon which are placed the bungalows of officers and civil servants of the Government. The altitude of the entire station is only about 5 or 6 feet above the level of the river; the drainage is open, and not as good as it might be. This defect is especially felt during the rainy season, at which period the atmosphere is loaded with moisture, and vegetation is excessive. The soil is either clay, with a shallow subsoil of gravel, or pure clay for a great depth. Kunkar (impure carbonate of lime), so common in other parts of India, is nowhere to be found. Water in the dry season is met at a depth of 12 feet, and in the rains at 8 feet from the surface. Numbers of trees, chiefly mangoes and tamarinds, form avenues, and are grouped in various directions, and afford, with the Viceregal grounds, which are large, open, and well kept, a sanitary provision of much value. The river is tidal, even higher up than Barrackpore, and is half-a-mile broad in this situation. Into it the sewage of the town is conveyed, and carried away by the retreating tide. The Calcutta road separates the officers' bungalows from the men's barracks, which are about half-a-mile from the river, and parallel to it On the other side of the barracks is the parade-ground, which is an open clean plain of considerable extent, reaching to the bounds of the cantonments in that direction.

The barrack bungalows are long narrow buildings of one story with tiled roofs, upon a raised foundation of about three feet; the flooring is of large flat bricks or tiles. The ventilation is principally that known as ridge ventilation, considered by many as the best adapted to India; it has the advantage of being quite out of the control of the men in opening or closing it. The barracks were built on the old Native Infantry lines in 1858 and 1859, and provide accommodation for about 1,000 single men and 120 families. Some of the barracks are built of brick alone, others have iron frames. There are 6 rooms in each barrack built of brick, and 5 in those with iron frames. The rooms in the brick buildings are 48 feet by 20, accommodating 16 men each, affording a cubic space of 1,200 feet and a superficial area of 60 square feet to each man. The rooms in the iron-framed buildings are 66 feet by 28, and provide a cubic space of 1,702 and a superficial area of 95 feet to each occupant. The ablution-rooms are small, but well supplied with basins and gurrahs. All the water for purposes of ablution is conveyed in mussucs, or skin bags. A large tank in the vicinity of the barracks affords the men a means of bathing, but no regular bathing place has yet been constructed.

The cook-houses are described as very indifferent, in fact mere "bells of arms" converted into cook-houses, having the most primitive appliances for cooking. Such places are quite unfit for the purpose, especially if Europeans are to supervise the cooking. The rations are stated to have been good, vegetables abundant, but chiefly of indigenous kinds; soldiers gardens were, however, in course of formation, which it was confidently expected by the officer in medical charge of the 43rd Regiment would be of considerable utility in varying the vegetable element of diet at this station.

The water supply is mainly from tanks, well water being reported brackish. Tank water is abundant, but often muddy; it appears to contain vegetable organic matter, and earthy salts, but not to a very great amount; nevertheless, diarrhœa is reported by one Medical Officer to result when this water is habitually drunk without undergoing the process of filtration. Common country filters are made for a few annas, and are in general use in the barracks; they are constructed with two gurrahs, or native baked earthern jars, one over the other. In the upper one a hole is made in the bottom, and a piece of sponge inserted to fit the hole; the gurrah is then half filled with sand and charcoal; water placed in it filters into the lower gurrah.

The hospital is a large airy building facing north and south, situated in an enclosure which isolates it completely. Segregation is obtained by a low wall supporting an iron network three feet high, allowing free ventilation.

It is divided into three wards, accommodating 50 men in each, providing 1809 cubic feet and a superficial area of 86 feet per man; the height of the wards is 23 feet to the centre of the roof. The floor is boarded. The ablution-houses are attached to the rear of the building, and the privies and urinals are approached by a covered way. The contents of the privies, of hospital, and barracks, are carted away morning and evening.

The bazaars are described as not large, and altogether under military control. Barrackpore obtains a fair character for healthiness when contrasted with the other stations for Europern troops in the vicinity of Calcutta. The experience of its salubrity for a European force, however, has extended only over a very short period. The favourable conclusion of its healthiness is founded by Medical Officers who have been quartered there on the grounds that their limited experience has shown it healthy for Europeans, and that the Governor-General's park and the station generally being open, clean, and sufficiently wooded, together with the care that has been taken to limit the number of native habitations in the cantonment, and to provide for their cleanliness, are all conditions found favourable to health in other parts of India.

CHINSURAH.

The cantonment of Chinsurah is about 25 miles from Calcutta, and is situated above Barrackpore, on the right bank of the river Hooghley. Its river frontage is about 1,000 yards, and its depth perpendicular from the river is probably somewhat more than half that distance. Within this space are contained the usual appurtenances of a military station, including men's barracks, hospital and offices, officers' bungalows, church, &c. The barracks may be described as the old or Dutch building close to the river and parallel to it running north and south, and the new barracks, as they are called, built in 1829, but vastly improved in 1858 and 1859. The former consists of two stories; is 300 feet long by 58 broad, having a narrow verandah to each story; latterly it has been chiefly used for the purposes of a store, and is not usually occupied by troops. The new barrack is described as a very fine building, running east and west; it is 885 feet long by 93 in breadth; is built of brick, two-storied, entirely surrounded on each story by lofty and broad verandahs, which are double on the south side. The rooms are lofty and airy, opening into each other by arched partitions, and are well ventilated; the floors are flagged, and that of the lower story is raised 3 feet from the level of the ground, between which and the floor exists a space with openings for free perflation. The following is the cubic measurement of this barrack:—

Lower Storey.[*]

Rooms $2 \times 69 = 138$
,, $6 \times 18 = 108$
,, $3 \times 9 = \underline{285}$
$\underline{531 \times 44 \times 16\frac{1}{4}} = 379,665$
,, $7 \times 22 - 10 = 159 \cdot 10.$
,, $1 \times 23 = 23$
,, $3 \times 24 = \underline{72}$
$\underline{254 - 10 \times 46 \times 16\frac{1}{4}} = 190,463$

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[*] These measurements, and the information generally for the remarks upon Chinsurah, have been chiefly derived from a special report by Staff-Surgeon Gibbon.

Upper Storey.

$$\begin{array}{lrcl}
\text{Rooms} & 2 \times 69\tfrac{1}{2} & = & 139 \\
,, & 6 \times 18\tfrac{1}{2} & = & 111 \\
,, & 3 \times 95\tfrac{1}{2} & = & \underline{286\tfrac{1}{2}} \\
 & & & \underline{536\tfrac{1}{2} \times 45 \times 16\tfrac{1}{4}} = 392{,}315
\end{array}$$

$$\begin{array}{lrcl}
,, & 7 \times 23 - 4 & = & 163 - 4 \\
,, & 1 \times 23 - 6 & = & 23 - 6 \\
,, & 3 \times 24 - 6 & = & \underline{73 - 6} \\
 & & & \underline{260 - 4 \times 46\tfrac{1}{2} \times 16\tfrac{1}{4}} = 196{,}690
\end{array}$$

,, over entrance.

$$1 \times 18\tfrac{1}{2} \times 46\tfrac{1}{2} \times 16\tfrac{1}{2} \quad = \quad \underline{14{,}300}$$

Total .. .. 1,173,433 cub. ft.

Capable of containing 1,173 men at 1,000 cubic feet per man.

It is suggested that the spacious verandahs might be used in any emergency requiring increased accommodation, and it is computed that they would afford space for 500 men. Such arrangement, however, should be avoided when practicable, as it would increase the objectionable condition of rows of men so situated when sleeping that, as the side of the building is exposed to the prevailing wind, the men to leeward breathe the air impregnated with the impurities from those to windward. The out-offices are in rear and to the north of the barracks, and consist of wash-houses, privies, canteen, cook-houses, and cells. They are all said to be well situated and judiciously constructed. A good large plunge bath exists. There are two fives-courts, much used, which, together with quoits and cricket, form the chief outdoor amusements. The water supply for drinking is derived chiefly from a large tank, the source of which is fed from springs; the water is reported to be of excellent quality.

The hospital is to the west of the barracks; it is a fine building, 300 feet long by 90 in breadth; it is two-storied, surrounded on each story by lofty and spacious verandahs. Each floor is occupied by a large ward, the length and breadth of the building; they are subdivided by two rows of arches into a centre and two sides. The total cubic space of both stories is 296,945 feet; they are capable of containing 148 men, affording about 2,000 cubic feet to each man.

The drainage consists of several well-made open drains, which converge and empty themselves into a large main underground brick sewer which runs from west to east through the barrack offices, and empties itself into the river at the north-east corner of the cantonment. These drains carry off slops, urine, and rain water; all offal is carted away twice a day. The situation of Chinsurah is little elevated above the river, but sufficiently so to admit of drainage. Some rows and groups of trees are judiciously placed to afford protection from the sun, and to cut off objectionable localities. It is damp, hot, and malarious; the surrounding country is low and marshy, in many places abounding in rank vegetation and jungle. The native population appears chiefly to suffer from remittent and intermittent fever. Cholera, however, may be said to prevail nearly always, and to have likewise an epidemic tendency not infrequently. Elephantiasis is exceedingly prevalent.

Chinsurah has a marked reputation for insalubrity, but several Medical Officers attribute somewhat of this to the composition of the troops that have heretofore in a great measure occupied it, namely, recruits recently arrived from England. Native spirits are said to be very easily procured, as the enormous native population in the vicinity—always ready to sell spirits to the soldiers—have hitherto baffled the power of military authority to afford an efficient check to the practice. The insalubrity of the locality is likewise attributed, in a great degree, to the bazaars and large native population, including the inhabitants of the towns of Chandanagore and Hooghley, which trench upon the bounds of the cantonments, presenting all the characters of filth and absence of drainage so general amongst native villages and towns in India, and in this locality specially noticed by Medical Officers as counteracting the best-devised sanitary measures that can be adopted in the cantonments.

REPORT UPON THE STATION OF BERHAMPORE.*

By Staff-Surgeon **Lamprey**, M.B.

The military station of Berhampore is situated in the district of Moorshedabad, on the left bank of the Bhaugiruttee, one of the great offsets of the River Ganges, and is distant from Calcutta 118 miles by land and 161 miles by water. Lat. 24° 5′ N., long. 88° 17′ E. At one time it formed the farthest limit of our possessions in Bengal, and is still considered an important station in a military point of view, from its proximity to the large and densely populated native city of Moorshedabad and surrounding districts.

The extent of the cantonments is very considerable, and, except at the north and south limits, which are occupied by native bazaars and houses, the general aspect of the place is open and airy.

The buildings occupied by European troops are built with regularity, and have some architectural pretensions. They consist of long ranges, which occupy the four sides of a large quadrangular open space forming a fine parade-ground. On the eastern side of this square, three large two-storied barracks, capable of containing 200 men each, are situated. When European troops occupied the station formerly, 490 men were crowded into each building; the consequence of which was great sickness and mortality. The same buildings, under the new arrangements, will each accommodate only 200 men with safety.

Each building consists of an upper and lower room, with verandahs on each side, to which an outer verandah has recently been added. These centre rooms have been expanded at each end into wide, airy rooms, while the ends of the verandahs have been partitioned off for serjeants.

The upper story is reached by wide flights of stairs at each end, and corresponds with the lower room in all its dimensions.

In rear of the buildings marked No. 1 and 3 are ranges of cook-houses, wash-houses, privies, and urinals; while, in rear of No. 2 or the centre one, the old guard-room and cells (in one small building) are situated. The latter has been condemned, and new and spacious cells and guard-room have been just constructed as seen at A in the ground plan.

On the north side of the parade-ground there is a set of three double ranges of ground-floor buildings. They have recently undergone repairs and alterations, and are intended to accommodate 90 men each. Formerly, 240 men were crowded into each range of buildings, with, no doubt, fatal effects. Were it not for fourteen partitions 18 ft. 6 in. by 8 ft. that now subdivide it, each building would form one long room 300 feet in length. The quarters in the double range towards the west, being private property, have undergone no alterations, and, at present, are chiefly occupied by officers.

The buildings on the south side of the square correspond with those just described. They are, however, intended for married men's quarters, and are constructed to accommodate 30 each. They were formerly officers' quarters, the rooms of which have been divided by wooden framework partitions. These apartments are habitable enough during the cool season. Each room, originally 26 ft. by 17 ft., is divided by the partition into two rooms 26 ft. by 8½ ft. height 17 ft. 6 in. They are a temporary expedient, recommended by Colonel Napier.

The double range towards the west is also private property, but is chiefly occupied by officers. At present, each range of building is provided with cook-house, wash-house, privies, &c.

The buildings on the north side of the square, of larger size than the former,

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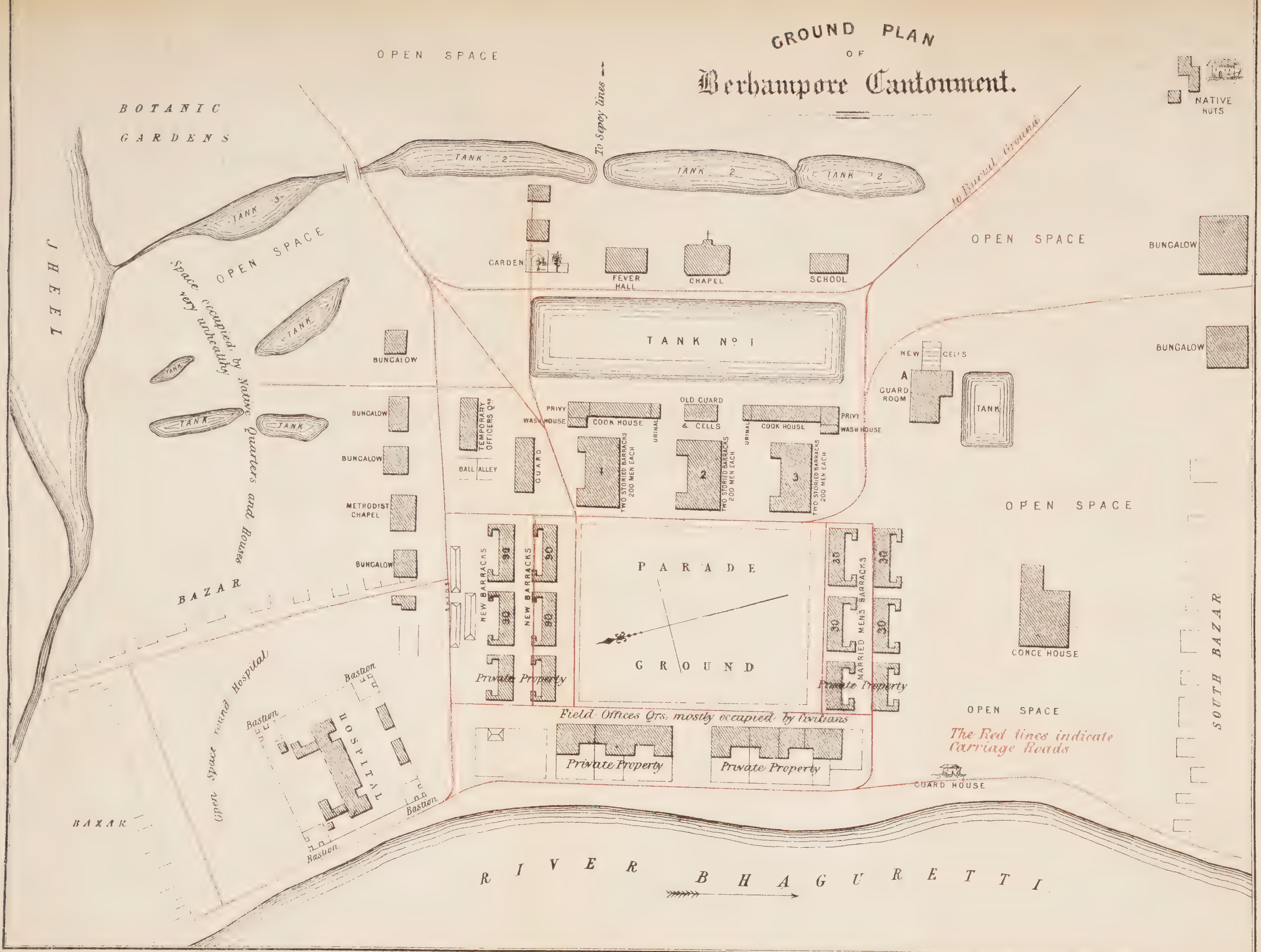
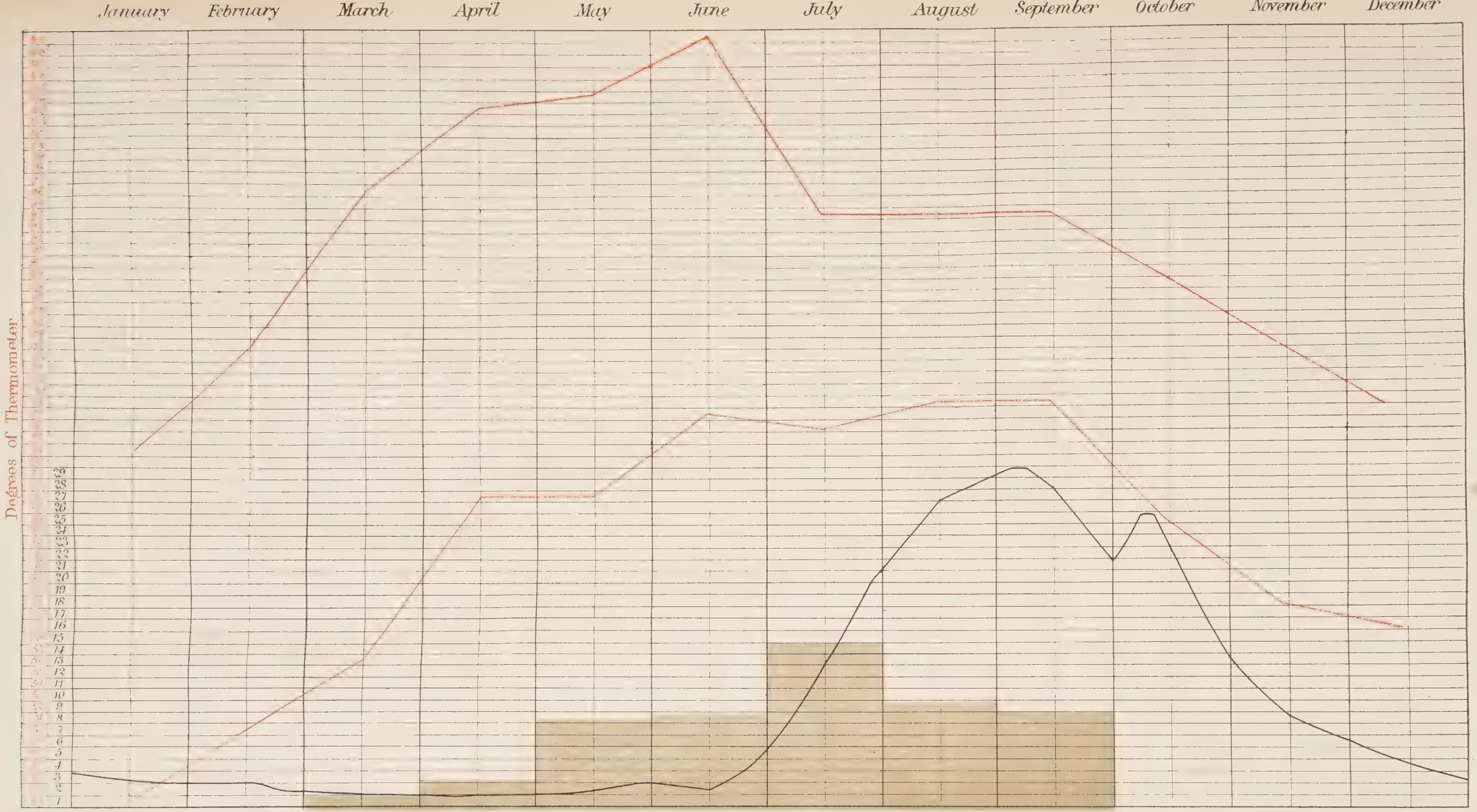
* This is the most recent descriptive detail of this station that has been received. It is dated 1859.

GROUND PLAN OF Berhampore Cantonment.



Day & Son Lithrs. to the Queen

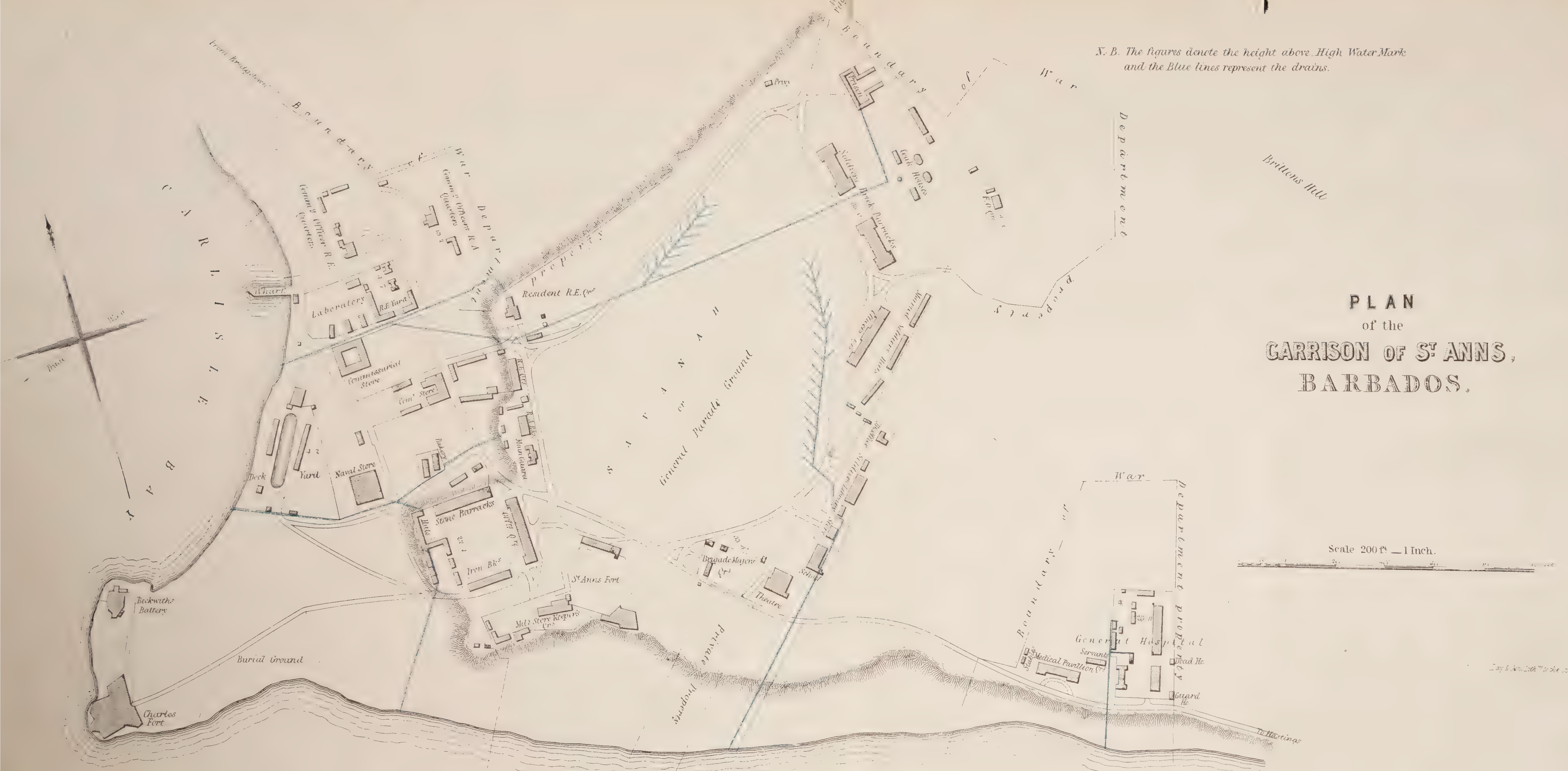


The Black Line will indicate the variation of the water level of the River Bhaguretti throughout the year 1858 as registered at Berhampore on the 3rd 4th 5th & 6th of September was at its highest level when 28 feet 7 inches was recorded; while in April & May previous one foot was the measurement.

The Upper Red Line is intended to represent the maximum temperature of each month of the same year: the lower Red Line represents the minimum temperature

The tinted portion near the base line indicates the fall of Rain for the year 1857: the greatest amount fell in July, when 14.38 inches was recorded: the total for the year measured 51.91 inches

J. Lamprey Staff Surgeon fecit.
Berhampore, January 1859.



PLAN
of the
GARRISON OF St ANNS,
BARBADOS.

N. B. The figures denote the height above High Water Mark
and the Blue lines represent the drains.

Scale 200 ft — 1 Inch.

Day & Son, Lithrs to the Queen.

are subdivided by a central open space or carriage-way. They, also, are private property, and mostly occupied by civilians. They were originally constructed for field-officers' quarters, but were, along with other buildings, afterwards disposed of by Government some years back, when the Station was considered too unhealthy for European troops. On the northern side of cantonments temporary sheds have been just constructed for the accommodation of artillery-guns and horses; but, as yet, they have not been required for that purpose. A long range of temporary buildings has also been constructed for subalterns. This range of buildings, although now complete, has not yet been occupied.

Between the sheds and temporary officers' quarters, there is a fine ball-alley, which is much frequented by the men.

All the barrack-buildings have just undergone a thorough repair and cleansing; and I learn from the Engineer that several new buildings are to be constructed to supply school-rooms, church, and also to provide accommodation for a detachment of artillery, horses, guns, &c. The latter will occupy much space, for which the present limits of cantonments are considered inadequate. It has been recommended to remove the Bazaar on the south side, which would clear away a dirty, densely-populated locality, and prove a good sanitary measure.

A new guard-room, with cells attached, all of spacious dimensions, viz., 11 ft. by 10, and 18 ft. high, has just been completed, and will shortly be fit for use. A site for a new congee-house, or place for military prisoners, has been selected on the south side of the cantonments. The utmost accommodation for European troops afforded by the barracks at present, is equal to 1,080 men, or not more than a complete regiment.

About a mile distant from the European barracks, towards the east, and across an extensive open plain, there are Sepoy lines or barracks. This is not an unhealthy situation, although there is much vegetation about, and some large water-tanks close at hand. The lines might, on an emergency, be made available for European troops, and, I think, would prove not less healthy for them than the barracks, as the site is generally considered a healthy one for natives.

At a distance of about three miles further to the eastward, and on a well-elevated site, are situated the Native Cavalry Barracks. This locality is far superior to any other position for miles around, and deserves considerable attention should it be necessary to construct barracks for a further increase of the European troops.

The great mortality that occurred when the station was last occupied by European troops, caused it to be condemned. Of late years it has not proved so unhealthy; and it is probable that, by avoiding overcrowding, together with the improved conditions of sanitation recently applied, Berhampore maycontinue to deserve a reputation for greater salubrity than formerly attached to it.

The chief source of the unhealthiness of the Station is the depressed and moist site upon which it is built. During the heavy rains the ground remains flooded to a great extent; and, for some weeks when the river is at its height, it is 3 or 4 ft. below the water-level. Consequently, it requires the protection of a high bound along the river-bank, to preserve the Station from being flooded, and perhaps the buildings carried away. This renders the soil and houses exceedingly damp for most part of the year.

The soil is a stiff clay, being an alluvial deposit, is tenacious of its moisture; it is also greatly impregnated with nitrate of potass, which is commonly seen in all ground-floors of old buildings, in minute crystals on the surface of the ground, like hoar-frost. The walls, also, are thoroughly impregnated with nitrate of potass to a height of 4 or 5 feet from the ground. To obviate this, asphalte has been applied to all the floors of the buildings north and south of the parade-ground.

Another source of its unhealthiness arises from its close proximity to the river and the enormous extent of mud-bank disclosed by the subsidence of the periodical floods during eight months of the year—from November to June following, as seen by the accompanying diagram, showing the rise and fall of the river throughout the year. In the cooler weather (from December to February) this exposure of the mud may have little or no influence; but in November, March, April, May, and June, the weather being then hot, it does, no doubt (although this influence may be greatly modified by the direction of the prevailing winds), prove productive of fever; and perhaps in a period of epidemic cholera, it may assist its progress.

By the accompanying ground-plan it will be seen that there are tanks of considerable extent in the vicinity of the barracks. No. 1 is a large tank of 400 by 70 yards, and very close to the two-storied barracks. How far it contributed to the former unhealthiness of the Station it is difficult to say; but at present, although it is so very close, and serves as a receptacle for the drainage of the Station, I do not think it exerts any influence on the health of the men stationed here. It is kept free from decaying vegetation. The water appears clean, and it is made subservient to the drainage of the place, while the water in it holds a uniform level throughout the year. But the chief reason for supposing it of little influence is its relative position to the barracks with regard to the prevailing winds, which are mostly S.W. in the hot weather, and N.E. in the cool season. This tank is connected by a channel and sluice-gate with the tanks of water east, marked No. 2 in the ground-plan, and they with No. 3, which is connected with the jheel—a water-surface of considerable extent towards the north-east of the Station.

This jheel is connected with the river by a channel to which a sluice-gate is attached to prevent the ingress of water when the river is at its height, or to allow egress when the river is low. I learn it was customary to allow the water to flow out as soon as the river-floods had subsided, to reclaim a large extent of land for agricultural purposes; but, considering it a source of unhealthiness to the Station, when the sluices were about to be opened, on the 20th of October last, I wrote an application to the Commanding Officer to prevent it, stating my reasons. This was at once acquiesced in, and an order was given to the Executive Engineer to prevent it. The sluices, consequently, were not opened this year.

Referring to tanks Nos. 1, 2, 3, and considering their relative position as regards the space situated between them, its unhealthiness may be surmised, and this is corroborated by the general opinion of the residents, and the name by which one bungalow is commonly designated, namely, "Fever Hall." For these reasons I made objections to it as a site for artillery barracks, which are to be constructed in or near cantonments. The artillery barracks, with stabling and gun-sheds, are recommended to be constructed where the bazaar, south of cantonments, is at present situated. The removal of this bazaar would serve greatly to improve the health of the station.

The hospital is situated close to the river, to the north, and at a distance of about 400 yards from the parade ground. It is a two-storied building, surrounded by a large quadrangular space, enclosed by a moderately high wall. On the outbreak of the rebellion, in 1857, a large extent of space surrounding this high wall was cleared of bazaar houses, which had encroached right up to the walls; it was also fortified, and appointed a place for the retreat of the residents of the Station, should it be necessary. On my arrival in August last year, I found it occupied by two companies of the 35th Regiment and the Naval Brigade. In front was a park of artillery and some old guns, collected from the district; a quantity of gunpowder, equal to 200 barrels, was stored in one wing of the building; a large amount of treasure was stored in the ground floor, besides a quantity of old arms collected from the neighbourhood. At each angle of the compound a bastion of earth-work was constructed with embrasures for cannon, and loop-holed walls were built on most of the out-offices and buildings. The latter still remain. Shortly after my arrival the two companies of the 35th Regiment were removed, and the building became again the hospital of the Station. It is an oblong building, stretching east and west, divided into three central wards, with closed verandahs on each side on the lower and upper storey, in all equal to eighteen compartments.

The wards are well lit and ventilated by numerous large windows on the north and south side of the building.

At each extremity there is a smaller building connected with the central building by a small verandah. These buildings are occupied as surgery and steward's store-rooms.

In rear of these buildings there are out-offices, as cook-houses, places for native hospital servants, privies, &c. The back rooms for the patients are placed one at each end of the main building, on the upper storey over the verandah, connecting the two wings with the main building.

The hospital accommodation is not sufficient for a full garrison, in the hot weather especially, when there is most sickness, and when men in hospital require almost double the space they do in the cooler weather. It will not hold more than 100 patients with safety, whereas the accommodation originally was arranged for 120.

The drainage of the station is very ample. It is accomplished by brick-work open drains, with a fall towards the large tank, marked No. 1 on the ground-plan. These drains are constantly attended to, and kept free from the growth of weeds and grass. The night soil is removed from the privies of the station by carts made for the purpose, and is deposited in the river at a distance of about one mile south of the Station.

Good drinking water is provided from wells and tanks in the vicinity. It is wholesome enough, though the wells in the hospital compound are so thoroughly impregnated with phosphates and nitrate of potass as to be unfit for all purposes except washing clothes. Good water in sufficient quantity is provided by the bheesties of the hospital establishment, and procured from good wells or tanks. During the hot weather I had occasion to represent the state of the wells in the hospital compound, which, owing to the disuse they had fallen into, became very offensive. A quantity of lime was thrown in, and a good deal of the water removed with considerable benefit, although, had the wells been cleaned out, as I recommended, the renewed water might have been fit for all purposes. There was a difficulty in cleaning out the wells, owing to their large size.

That the temperature differs in some respects from the stations farther south, is explained by the greater elevation, it is 76½ feet above the level of the sea, and its nearer position to the great mountain ranges to the north-east. During the cold weather, in January, as shown by the diagram, the temperature is recorded as low as 44°. At this time the winds are mostly northerly, while in the hot season, in June for instance, the winds being southerly and consequently passing over a larger land surface, the maximum temperature is recorded so high as 109°. The average fall of rain is about 51 or 52 inches in the year. A few showers commence in March ; July is usually the wetest month. It is then the ground is flooded, and the atmosphere feels oppressively hot.

STATIONS OCCUPIED BY EUROPEAN TROOPS IN THE BENARES DIVISION, INCLUDING DINAPORE, HAZAREEBAUGH, AND BENARES.

DINAPORE.

Dinapore is in the military district of Benares, and is situated on the right bank of the Ganges, a little below the junction of that river with the Soane. It lies in 25° 30′ northern latitude, and 85° 1′ eastern longitude, is about 370 miles from Calcutta, and some 12 miles higher up the river than the large native city of Patna. The station is 210 feet above the level of the sea ; there is no higher ground within several miles. The surrounding country presents a remarkably level character, which of course must impede its natural drainage. Nevertheless it is said that large marshes do not exist, and except in the rainy season the neighbourhood of Dinapore presents a dry tract of country intersected by nullahs tending towards the river. The rains lodge, however, and for a time extensive portions of the country are partially under water. The soil is alluvial clay, with a subsoil of sand ; in many places it is impregnated with carbonate of lime. Cultivation of opium, maize, rice, wheat, the various pulses, and of the ordinary crops, is extensively carried on ; in fact, this district is represented as highly productive in the staple crops of this part of India, and irrigation is consequently freely practised. The native inhabitants of this portion of the district are not usually wealthy, but actual poverty does not commonly prevail. The railway from Calcutta to the North-Western Provinces lately constructed, passes close to the station; it is a new feature which must tend to general improvement in all the relations of civilization.

Dinapore has been for many years a large military cantonment, but since the mutiny has assumed still greater importance, inasmuch as increased accommodation has been provided for Europeans by building an entire new range of barracks upon the position formerly occupied by the Sepoy lines. The barracks may be described as the old, or permanent, and the new, or temporary, structures; the former are a little distance removed from the river, and by their arrangement form two quadrangles lying east and west of each other; they were at one time occupied by a regiment of European Infantry and a battery of Artillery, but of late years have been tenanted by a smaller force. Officers' quarters, the church, and the various offices usually appropriated to a regiment, are included; in addition to which, merchants have been allowed to occupy some of the buildings as dwelling-houses and stores. These barracks are all one story high, and raised upon a plinth of only one foot and a half from the ground. The buildings chiefly occupied by the men face north and south, presenting only the ends to the prevailing winds during the monsoons; the officers' quarters, facing east and west, are better situated in this respect. The cook-houses, ablution-rooms, and privies are stated to be well placed and suited to their various purposes. It does not appear, however, that there is any provision in the cook-houses beyond the small native fire-places for cooking the rations. The drinking water is derived either from wells or from the Ganges; the latter is esteemed the best, and when filtered is considered good. The impurity of the water is said to consist mainly of salts of lime. Sewage impregnation was at one time suspected in some of the wells, but of late years those in cantonments are said to be free from it.

The new barracks were constructed in a very short space of time in 1858 and 1859 upon the site of the Sepoy lines, considered the best in the vicinity of Dinapore; the ground in this situation is somewhat raised, and forms as it were the river embankment. It is narrow, but has the advantage that in exceptional years of very heavy rains, when the country around is under water, this portion remains dry. Moreover, it is bounded on the north by the river, nothing intervening, and to the south a large open plain extends. The new barracks consist of 16 large brick buildings, facing east and west, the direction from which the prevailing winds blow. They can accommodate a regiment of Infantry, with families, and a battery of Artillery; they are one-storied, built on a plinth of 2 feet high; each soldiers' barrack holds 96 men, and affords a cubic space of 1,020 feet, and a superficial area of 60 square feet per man. The out-offices are said to be good, but no special commendatory remarks of any of them are made. The drainage is likewise reported satisfactory.

The hospitals, male and female, are situated upon the high ground, and separate from the other buildings. The new or temporary male hospital is quite open to the prevailing winds, and can accommodate 128 sick, providing 1,036 cubic feet and 61 square feet superficial area for each. The old or permanent male hospital is not built to catch the prevailing winds; it provides accommodation for 150 patients. The ventilation of the latter is not so good as that of the former; the drainage and out-offices are described as suitable and in good order.

The insanitary conditions that appear specially to have attracted the notice and reprehension of nearly all Medical Officers who have been quartered at Dinapore are the bad drainage, and the very large native population which encroaches in every direction, except on the north side (that next the river) upon that portion of the cantonment where the permanent barracks are situated; probably these evils have been the more dwelt upon as being deemed remediable in a great measure.

It is observed that a large nullah runs within 200 yards of the south of the permanent barracks, and, winding to the east through the cantonments, communicates with the Ganges; the sewage from the barracks is conveyed in made drains into this nullah. During the rainy season it is a vast open sewer, and in the dry season becomes a cesspool for every species of offensive matter. Supervision is extended to it as much as possible, but apparently it does not meet the nuisance. It is suggested that this should be filled in, and a large covered sewer substituted. The bazaars and native houses are described as very filthy, devoid of ventilation, and emitting most offensive smells. As far as those within the cantonments are concerned, every attention is directed to endeavour to obtain cleanliness, yet only to a partial extent with success ; but the numerous villages outside the bounds of the cantonments are felt to be in the highest degree insanitary ; no latrines ever exist in native villages, in consequence of which the vicinity is in a permanent state of filth. It can be easily understood that when such conditions are crowded in and around a station, insalubrity must attach to it, more especially in a climate where the atmospheric states tend so remarkably to the decomposition of animal and vegetable matter, the emanations from which are for lengthened periods so little disturbed by currents of air. Kuskus tatties, or grass screens, placed in doorways and constantly watered, are used at this station ; hot dry air, during the westerly winds passing through these, is cooled by the evaporation, and is most agreeable in reducing the temperature of buildings prior to the rainy season. Without entering into the sanitary question as regards tatties, which is a disputed one, it can at once be seen that, since it is an object to direct any currents of air that may prevail through the buildings, most of the soldiers' quarters in the old barracks are deplorably circumstanced in this respect ; being built facing north and south, not a breath of the prevailing winds can penetrate them. This is not much better obtained in the new barracks, for, though facing east and west, they are built parallel to each other, little more than fifty yards apart ; each building interrupts the current of air from the other.

It has been surmised that, as the river falls at certain seasons, and leaves large mud banks exposed, the proximity of the new barracks to the river may render them unhealthy. It is said, however, that this has not proved to be the case, and that these barracks have tended to mitigate the very unfavourable character attaching heretofore to Dinapore on the ground of its unhealthiness.

HAZAREEBAUGH.

The following observations with reference to Hazareebaugh have been chiefly obtained from the Reports of that station, prepared by Surgeon Holton, of the 77th Regiment, and Assistant-Surgeon Woolhouse.

Hazareebaugh is situated in the 24th parallel of northern latitude, and in 85° 24′ east longitude, on an elevated table land about 40 miles in length from east to west : it is known in the old maps as the Ramghur table land, and is 1,900 feet above the level of the sea, and may be said to form part of the northern front of the Vindhya range of mountains which run through Central and Western India. The station is in the military division of Benares, from which it is distant 190 miles, and in the civil district of Chota Nagpore ; it is 112 miles north-west of Calcutta, and 100 south of the Ganges, and is about 22 miles south of the Grand Trunk Road at Burhee, with which it is connected by a road which is being improved for general traffic.

Within view of the station, and extending in an irregular manner from north-east to south-east, at a distance varying from three to seven miles, are five conical hills of considerable elevation, principally covered with jungle, and some of them frequented by the larger species of game, as bears, tigers, and hog. These hills add much to the appearance of the station, which is also agreeably varied by numbers of trees of large growth and much beauty, consisting of the mango, teak, toom, pepul, mowa, cotton, toddy, &c. Several streams take their rise from different portions of the table land, and seek, by different courses, an outlet to the lower country ; the urrakas pursues a northerly course, the Koomas a southerly, and the Mohana winds to the west. The surface of the country is much cut up with ravines, tending to the south-west, in which direction the drainage of the station and neighbourhood tends.

There are no marshes of any extent in the vicinity ; the valley of the Damoodah river, about 30 miles south of the station, may be said to be the nearest marshy or low land. The plateau is thinly inhabited by the tribes of Sontals, Boomahs, Koomees, and others ; none of them have obtained an advanced state of civilization, and most of them are poor, ill-fed, ill-clothed, and ignorant even of agriculture beyond the primitive system of merely breaking the surface, without other preparation of the land, and sowing crops from the same seed year after year, and irrigating from pools and shallow wells; and yet there seems little doubt that valuable cultivation embracing many varieties of crops might be pursued in this part of the district. The soil is described as clay, with a mixture of gravel and sand; containing gneiss and granitic débris; the subsoil is also gravel, and, deeper still, black earth; no rocks exist in cantonments; the conical hills are said to be volcanic, or at least of igneous origin, but their mineral composition is not detailed. No stratified rocks are mentioned. The soil is porous, and does not retain surface moisture; water either freely runs off or percolates it, and does not seem to lodge in the subsoil. Extensive beds of iron ore, coal, mica, copper, and slate are found in the neighbourhood.

At Seetagurrah, about four miles east of the cantonment, a coffee and tea plantation is established; the coffee seems not to meet the expectation of the growers, but the tea does very well. Cotton has also been recently tried; the expectation of its success is held, but it is too soon to form a definite opinion. In the private gardens in the station, as well as at Seetagurrah, every description almost of English vegetables is produced, cabbages, peas, beans, onions, lettuces, celery, radishes, with potatoes, carrots, turnips, &c.; and with proper care everything of this kind required for European troops could be cheaply provided. Many of the European and Caubul flowers and fruits that will not grow in many other parts of India thrive admirably in the gardens of Hazareebaugh.

The cultivation around the station is somewhat scanty: rice is grown a good deal, and seems to be the chief food of the natives; its growth has been prohibited as much as possible in the vicinity of cantonments, as it was presumed to be prejudicial to health from the irrigation necessary for its culture; other cereals and opium are also grown.

The surrounding country is covered in many parts with jungle of various degrees of density. The jungle approaches from the north-east to within about four miles of cantonments, but their salubrity does not appear to be thereby affected, though the jungles at certain seasons of the year are very unhealthy to those who either dwell in them or resort to them much. The tradition of the natives, which is believed to be correct, is that they are not safe till December. There is no larger town, except that of Hazareebaugh near the station; but even that is objectionable. The cantonment is somewhat limited in extent, and native bazaars would be better at a distance.

Other sites, one about two miles to the north-east, and another the same distance to the east, are described as more roomy and elevated, and very eligible were increased space for the construction of barracks required.

In the year under review, the mean of highest temperature of the air at Hazareebaugh in the hospital was 87, and the mean of lowest 51. It is estimated by several medical officers that the temperature may be considered from 6 to 10 deegrees lower than the generality of stations in the plains. The rainfall is not given in the Reports referred to, but it is said to be rather heavy, probably averaging between 50 and 60 inches in the year. The seasons of cold and hot weather and rains extend over periods similar to other stations in Bengal. In March, April, and May hail-storms often occur, which cool the air very pleasantly. It is said that the grass retains its greenness all through the year. The prevailing winds have been from the west and east, with a southerly or northerly variation in accordance with the monsoons.

The drainage is very good. This is provided both by the slope of the ground and by good made drains, which carry off the surface-water and the water from the ablution-rooms.

The water is obtained from tanks and wells; that for drinking purposes chiefly from wells. It is said to be good, but to require filtering; the chief impurities enumerated in it are lime and potash, with a little vegetable organic matter. Iron is an impregnation in some of the wells.

The barracks consist of 15 bungalows, built in irregular echellon, facing east and west, the course of the prevailing winds. As the ground is uneven, the barracks partake somewhat of an irregular character in disposition, but are well situated; they stand on a plinth of two feet. They are brick buildings, 20 feet wide and 18 high, with 10-feet verandahs. Those for unmarried men accommodate 100 in each, affording 1080 cubic feet, and a superficial area of 63 square feet per man. Those for married soldiers contain each 24 families. The ventilation is by an opening along the ridge, in addition to which there are windows which move on pivots over each door; the roofs are tiled.

The hospitals, male and female, are built to catch the prevailing breezes. The male hospital can accommodate 96 men, providing 1081 cubic feet, and a superficial area of 63 square feet for each patient. It is very similar to the men's barracks, except that it is built on a plinth of 4 feet.

The out offices of barracks and hospitals are on the standard plan for temporary barracks, and call for no special mention except that the ablution-rooms are provided with pipes, taps, and metal basins; the former communicate with cisterns, which system is found to answer well. The ordinary out-door games were enjoyed by the men of the 77th Regiment in 1862. A good reading-room, supplied with books and papers, and several games, such as draughts, dominoes, bagatelle, &c., was much frequented; coffee could be procured there. The workshops were in good working order, and fairly attended. The gardens were not so successful, which is attributed by the surgeon of the regiment in a great measure to the expected removal of the corps at the end of 1862 to another station, in consequence of which the men did not feel inclined to work at the gardens.

Documentary evidence of Medical Officers as to the experience of the healthiness of Hazareebaugh is only obtainable for this Report from 1859 to the present time; but for that period it is unanimous and forcibly expressive in favour of the station as a residence for Europeans. Surgeon Holton, of the 77th Regiment, says in his Report for 1861: "On the arrival of the regiment at Hazareebaugh, the men were in a very weakly state, even those men at duty were greatly debilitated." In his Report for 1862 he observes, "the climate of Hazareebaugh is changeable but cooler than the plains; April and May are really the only hot months and these are generally tempered by the occurrence of thunder storms with rain and hail. I consider the climate well suited for Europeans, and conducive to health, and would exercise a very beneficial effect on constitutions weakened by a residence in the plains, as proved by the wonderful change in the health of the men of the 77th Regiment." Again he observes, "In fact I look upon it as a sanitarium. In support of this statement I wish to mention that when called upon in the beginning of the year to select men for the sanitarium at Darjeeling, I felt averse to send any there from the experience I had already of the benefit derived by the regiment from the year spent at Hazareebaugh. However, I selected a few men most likely to be benefited by the change and sent them, keeping back others in much the same condition and I have no hesitation in stating that on the arrival of some of these men from Darjeeling a few days ago, they were not in as good condition as the men who were kept at Hazareebaugh."

In another portion of his Report, Surgeon Holton contrasts the admissions into the regimental hospital for the years 1860, 1861, and 1862, the two latter years were passed by the regiment at Hazareebaugh, while 1860 was passed at other stations in the plains. During 1860 there had been 4,081 admissions into the regimental hospital, in 1861, 2,143, and in 1862, only 575, and there were remaining in hospital on the 31st of December 1862, but 42. The average strength of the regiment during the year had been 902⅓.

He terminates his Annual Report for 1862 by the following remark: "I think I am justified in stating that the health of the regiment, heretofore so bad, can now bear comparison with that of any regiment at home or abroad."

Assistant-Surgeon Woolhouse in his Annual Report of this station for 1861 observes: "The climate is an exceedingly pleasant one, and very much cooler than that of the plains of India. The thermometer goes down considerably below freezing point during November, December, and January, when hoar frost may be seen on the ground for some time after sunrise. The heat during the hottest weather is seldom unpleasant within doors, and during the rains it is frequently chilly. In many houses at Hazareebaugh punkahs are never used throughout the year." He then goes on to express the opinion that with ordinary care the European would enjoy good health at this station.

Without making a lengthened recapitulation of the previous remarks, or quoting other opinions on the subject, it can be collected that though the years under consideration may have been to some degree exceptional, enough is shown to institute a favourable comparison as regards Hazareebaugh as contrasted with the other stations just considered in Bengal Proper.

Its elevation and temperature, the dry character of the soil, the facility for drainage, the absence of excessive native population, and the experience of a few years all point to this station as favourable either to the European when debilitated by climate, or, as has been suggested by some Medical Officers, when he arrives first in India to undergo acclimatization. However disputed the theory of acclimatization in India may be, as ordinarily understood, it must be admitted by the most sceptical on the subject to include at all events a training in the requirements for living in India, and as a consequence the habits to be avoided, not understood by men on first arrival in the country, Its proximity to Calcutta and Raneegunge would render the suggestion of occupying it by fresh arrivals from England easy of adoption if deemed advisable.

The fact seems likewise established that two other good sites, at least, for cantonments are available in the vicinity. It is said that one of these would be nearer to the jungle than the present cantonment; but could not a few miles of the jungle be cleared where too close? Instances are numerous in Oudh, where, since the mutiny, jungle has been cleared without much expense or difficulty on a more extended scale than would be necessary at Hazareebaugh.

The conclusion seems apparent, that if Hazareebaugh is entitled to anything like the character it has obtained, and if European soldiers are to be retained in Bengal proper, it would be a saving to the State to build more barracks in this locality, and to locate there as many of these soldiers without overcrowding, as political and strategical reasons will permit.

ABSTRACT FROM THE ANNUAL MEDICAL REPORT OF THE 2ND DRAGOON GUARDS, FROM 1ST JANUARY TO 31ST DECEMBER, 1862.

By Surgeon MASSY.

Benares, 1*st January*, 1863.

The head-quarters and six troops of the 2nd Dragoon Guards left Lucknow on the 4th of February last, *en route* for Benares, which place they reached on the 21st of the same month, and have been quartered here ever since. One squadron, under the medical charge of an Assistant-Surgeon, marched from Lucknow about the same time for Cawnpore, where it has been detached up to this date. The distance from Lucknow to Benares is about 175 miles, and was accomplished in 15 marches. The line of march lay for the most part through the districts of Sultanpore and Jaunpore; the entire country presented evidences of the most extensive cultivation; the crops consisted of cereals and pulses of great luxuriance. Water was always abundant and good, and supplies were easily obtainable. The regiment marched daily at about 6 A.M., and reached its destination soon after 9. The sick accompanied it; a tent and some of the hospital cooks were sent in advance overnight, so that breakfast for the sick was ready soon after their arrival daily. But one man was admitted into hospital on the march. The men improved much, and were in excellent health on their arrival at this station.

Topography and Sanitary Condition of the District and Station of Benares.

The military division of Benares is much more extensive than the district, and contains several military stations, the principal of which are Benares, Hazareebagh, and Dinapore. The district of Benares is under the civil jurisdiction of the Lieutenant-Governor of the North-West Provinces. The cantonments have been for several years the head-quarters of the Divisional Command. The district may be described as bounded on the north by Jaunpore, on the north-west by Ghazeepore, on the south-east by Shahabad, on the south and south-west by Mirzapore and Jounpore. It lies between the northern latitude of 25° 7′ and 25° 32′, and between the eastern longitude of 82° 45′ and 83° 15′. It is about 55 miles in length from east to west, and 30 in breadth, and contains an area of nearly 994 square miles. The present district of Benares was the seat of an independent Hindoo State, founded by a Kâse

Rajah, 1,200 years before the Christian era. After many centuries it became subject to Oude, and was ceded to the East India Company under the treaty of 1775. The present Rajah of Benares is a descendant of the original Zemindar who opposed Warren Hastings when levying money in excess of the revenue.

The Ganges runs an irregular course, connected with the Benares district for nearly 50 miles; the Karamanassa and Goomtee also course through it. These are large rivers, which afford an extensive water-way for purposes either of traffic or irrigation. Water is aptly designated "the prime necessity of Eastern life." In England, the oft-recurring wet seasons frequently induce a fear of the watery element—such is rarely the case in India. Wells, tanks, canals, and every system of irrigation is adopted to counteract the effects of the burning sun; by the aid of water the most barren tracts are made to yield abundant harvests—a plenteous rainy season secures from all chance of famine. The Burna nuddy runs through the district, and may be said to divide the civil and proper military lines of the station from each other. It is only navigable for small boats; but is, of course, of great utility for purposes of drainage and irrigation. It is, no doubt, attributable to these rivers in different directions that the district, though very level, affords so few instances of jheels, or large collections of water. Any great overplus would always seek an exit through these channels. The district is nearly quite level, though higher in its general features than the level of the rivers flowing through it; the altitude above the sea nowhere diverges from a minimum and maximum of from 270 to 300 feet. Good pucka (or permanent) roads to the various large stations bordering the district exist, and kutcha (unmade) roads suitable to the still primitive nature of the carriage of the country, abound. The railroad from Calcutta to the North-Western Provinces is now open to Benares.

In the Mirzapore district bounding Benares, hills of an altitude varying from a few hundred to two thousand feet, of aqueous formation, extend for a considerable distance from the right bank of the Ganges. They gradually rise from the plains; they are altogether sand and limestone, and are extensively quarried for building purposes. In many parts they are covered with jungles, which harbour tigers and various species of deer. In Benares district, however, no rocks anywhere exist; the only approach to stone is a calcareous conglomerate called kunkar, which is usually met in small hard pieces, but sometimes in large flat layers, where it would appear as if either the water had drained off, or it had percolated and been deposited. It is an impure carbonate of lime often containing iron, silica, &c., and exists in large quantities—in fact, is found almost generally at various short distances from the surface, and the soil is often impregnated with it. The latter is, for the most part, a light argillaceous or sandy loam. Heber describes the soil on the banks of the Ganges in this vicinity "as a light, marly loam, dry, sound, and friable, without any admixture of stones or cold clay, and not much sand." The dryness of the soil, from its absorbent properties, is remarkable, as, after rain, even where drainage is defective, in a few hours it is hardly appreciable that rain had fallen, yet it is not observed that the subsoil is specially malarious.

Barren tracts of land are occasionally met; they are impregnated with soda, nitre, and other salts; similar tracts are very common in Oude. I have seen plains in Oude so impregnated, affording the appearance, under certain states of the sun's light, as if covered with a thin coating of snow. The barrenness arises probably from the superabundance of nitrates in the soil. These nitrates are most likely due to different causes. Decomposition of the air and water in a moist locality left uncultivated for a time and abounding in salts, is likely to be a source, aided by vegetable decomposition. Water in the vicinity often contains these salts in solution. In encamping, it is always prudent to avoid such localities. As far as I have had opportunities of judging, trees are plentiful—they certainly are within a circuit of some miles from the station. They consist, for the most part, of mango, tamarind, mulberry, jack, peepul, mowha, lime, and cocoanut. The staple products of the rubbee or spring crops are wheat, barley, pulses of various kinds, millet, maize, various oil-seeds, opium, tobacco, and many of the esculent vegetables of Europe. The crops sown in, or just prior to, the rains, and reaped in the autumn, consist of rice, maize, various pulses, jewar, bargara, hemp, indigo, and numerous country vegetables.

The land tenure in this part of the country is said to be that chiefly known as Zemindaree, usually considered the best of the three great systems of land occupation in India. It theoretically provides protection for the cultivator. He is supposed to be the actual owner of the land as long as he pays his rent, and the zemindar cannot dispossess him. The zemindar pays the taxes to Government, but it is questionable if practically this system is carried out even generally in its entirety. This is attributable to native dishonesty, and is an argument more against the individuals who act than against the principle of the system. Both the Ryot and Puttadaree arrangement are equally, probably, more liable to unfair dealing. However, it may be said that the inhabitants of this district are well off, and the crops and cultivation hold a fair average in comparison with neighbouring districts. It would seem reasonable to assume that the conditions alluded to—viz., inhabitants able to afford, and having facilities for, irrigation and drainage for the purpose of tillage, extensive cultivation—a dry soil, and abundant trees, are capable of exercising a favourable effect upon the many sources of disease incidental to a nearly tropical climate. It is, nevertheless, the case that the natives of India have little or no idea of the value of sanitary arrangements. It would be difficult to discover, in any land where European civilization has so long been presented to the people, a more complete abnegation of practical sanitary measures. In few conditions have they improved very much ; in none probably have they walked hand in hand with us ; but amongst all the associations that generate, or assume a stimulus, from civilization, there seem none that have been less influenced than what are understood as the preventible sources of disease. It is not that a leaven merely of their old customs still prevails amongst the people ; but in the agricultural districts, at all events, the domestic habits of centuries back exist. The calls of nature are obeyed in the immediate vicinity of their villages and houses ; no privies nor isolated localities are anywhere found. Such habits, in such a climate, with a dense population, render the smell of native villages most abominable. Frequently in villages there are large excavations, which in the rains are filled with water ; these are used for purposes of ablution and irrigation, and when they become empty, or nearly so, must be highly productive of emanations which tend to develope and support the sources of zymotic and other diseases. Other sanitary conditions of these villages, moreover, are equally opposed to the plainest principles of hygiene. It would be untenable for a moment to argue that we have not done much for the social and moral improvement of the natives ; but these and other domestic habits have been quite untouched, and require the consideration of the Legislature. Their improvement would no doubt in time produce well-marked effects upon the physical condition of the people.

The city of Benares is built upon the left bank of the Ganges ; its river frontage is about three miles, and its breadth is probably a mile. The population is estimated at 250,000, by far the majority of which are Hindoos, not more than a tenth being Mussulmans. It is reputed a fair type of an Eastern city ; the houses are irregular and lofty, built of stone and brick ; the lower part of nearly every house is a shop ; the streets are very narrow, so much so that an elephant can barely pass, but not turn in many of the thoroughfares ; the drainage is chiefly surface, but made drains run under some of the streets—all tend to the river ; as the banks of the Ganges are high in this situation, there is luckily a considerable natural fall for the drainage, which is a great advantage where there are no means of flushing the drains. The water supply for cleansing them seems to be derived from the periodic rains and the fluid drainage of the houses ; the consequence is, that in the dry season the effluvia are most offensive to a European. Benares is said to be usually healthy ; still it seems improbable that, in the event of any epidemic prevailing, the extension of disease would not be considerable, as the height of the houses and narrowness of the streets obstruct the ingress and egress of currents of air, which might otherwise aid in diminishing the very offensive odours nearly always existing. It appears to me that the rarity of typhus and still more of enteric fever in this locality is a strong argument against the general prevalence of these diseases in this country. Here would seem the conditions necessary for the generation and spread at all events of typhoid fever ; yet, admitting the occasional observance of this disease in India, which has been established and recorded by more than one Medical Officer of experience, there can be little doubt but its rarity of recognition heretofore has been reconcilable with the view of infrequency in existence, rather than with any supposition of complication or other cause affecting diagnosis.

There are no handsome or even very curious buildings in Benares. A temple, the roof of which is sheeted with gold, was built by Runjeet Singh some half-century back, it is of considerable sanctity and value, and is crowded with emblems of the creative deity Siva; the Linga is everywhere seen. It is a strange sight, and must induce reflection in the most thoughtless professors of Christianity to find offerings made, temples built, and priests in hundreds ministering in solemn prayer to such an object—a sad condition after Christian occupation for so many years. Greek amongst the heathen mythologies is lascivious enough, but it is purity itself compared with Hindoo mythology. An observatory about two hundred years old, in a very imperfect state, still stands; it contains some curious and interesting old astronomical appliances. Two minarets, of something under 150 feet in height, were built by the Emperor Arungzebe, upon the site of a Hindoo temple, to commemorate the Mahomedan ascendancy; they are built close to the river, and are with the Ghauts the most prominent and picturesque objects in the city when viewed from the water. Benares is a very holy city, and it is believed by all good Hindoos that to die there, assisted by certain rites, insures admission into Siva's place of bliss: its proximity to the mighty and holy Ganges was probably the origin of its sanctity. The trade chiefly consists of sugar, opium, indigo, silk, and cotton; kincob, a fabric of gold or silver and silk or muslin manufactured there is much admired. Though there are no extensive manufactories in Benares, it is, nevertheless, a very wealthy place, and is the centre of many of the great commercial outlets of India. Its position and also its sanctity render it a locality where merchants much do congregate.

The station of Benares is about three miles from the city, and is close to the Burna river or nuddee, which empties itself into the Ganges below Rajh Ghât. Like most stations, it comprises what may be considered the military and civil lines; it is about 422 miles north-west of Calcutta, and is distant from Allahabad 74 and from Delhi 466 miles, and is intersected by the Grand Trunk Road. Prior to 1857 the military cantonment comprised only one locality, denominated Secrole, situated between the Burna and the city, but close to the former, and on its right bank. In 1858 temporary barracks were constructed at Secrole for the accommodation of about seven companies of Infantry and a battery of Artillery. Since the mutiny a fort has been constructed at Rajh Ghât, about three miles from cantonments, immediately commanding the passage of the Ganges, where is situated a bridge of boats connecting the terminations of the Grand Trunk Road at each bank of the river.

In addition to the fort, some bungalows, designed and built for a native lunatic asylum, were appropriated for troops by the Government in its emergency in 1857, upon the influx to the country of a large number of European soldiers; they are situated on the left of the Burna, near the civil lines, and but a short distance from the original cantonments; they are now occupied by the 2nd Dragoon Guards, and are commonly denominated Pandypore Barracks. However well fitted they were for native lunatics, it can easily be comprehended they are not so well adapted for English soldiers. It is unnecessary to enter into a minute description of them, as it can hardly be intended to occupy them permanently without very extensive alterations. It will suffice to point out some of their most prominent features. The plain upon which the Pandypore Barracks are situated is of very considerable extent, and is as level as it well can be, if requisite, any reasonable amount of barrack accommodation and parade ground could be constructed there. The bungalows are very irregularly built, they afford accommodation for somewhat more than three hundred men; in their general arrangement they form three sides of a large square; the fourth side is partially closed by a guard-room and one or two other small buildings; the centre space is to some extent occupied by an ornamental flower garden. At the distance of a few hundred yards in every direction from the barracks, topes and rows of trees exist; the bungalows are as it were in the centre of a circle, the wide circumference of which is formed of trees, but sufficiently far off not to impede ventilation.

With the exception of the hospital, none of the buildings are on a raised foundation, all are flush with the ground; some of them are very low, and are divided down the centre by a wall which renders them close and confined, and four of them are so built side by side within fifty yards as to shut out each other from the prevailing winds; none of them have a dining hall. One-half of the building appropriated as an hospital is occupied by married soldiers and their families as well as by the medical subordinates: a most objectionable state of things as regards discipline and other important considerations. The cook-houses are upon the most primitive plan, the cooking places are upon the ground, consisting of a few bricks; stewing and boiling can be done as well as what is called roasting, which consists of putting the meat with a little water in a pot over a fire, and allowing the water slowly to evaporate; the meat is thereby half roast, half stewed, and the process is a wasteful one. There are no ovens or boilers. The latrines are constructed upon more recent principles; the iron stool-pans fit under the seats, and are removable from without. The ablution-houses are large, but not well arranged; all water is carried to them by Bheesties, and there are no facilities beyond the mussuc for cleansing the entire person; no swimming bath is yet constructed, though one is in course of formation. There is a good covered skittle alley, and the men play skittles, cricket, quoits, and football a good deal, especially in the cold weather; there is no gymnasium or ball court, and though the Officers of the regiment are assiduous in promoting amusements for the men, sources of occupation and amusement still stand as most prominent desiderata in this portion of the station.

The drainage in the immediate vicinity of the barrack buildings is good; the drains are open but pucka,* and no water lodges in the rains; cesspools have been all filled in. There are several large excavations not far from the barracks, which contain water, but their sides are steep and admit of no rank vegetation. The horse lines are due south of the men's bungalows, about two hundred yards' distance from them; they are constructed upon the worst piece of ground in the neighbourhood; it is low and uneven, and swampy in the rains, and cannot be well drained. Beyond the horse lines there is a jheel some 250 yards long by 100 broad; when full in the rains, it is on a level with the horse lines, and prevents their being drained, and in the dry weather, as it dries, it exposes a large space of mud and decomposing vegetable matter, which by all the rules of sanitary dogmas ought to be unhealthy. It and the horse lines, however, are separated from the men's bungalows by two rows of fine trees which most probably have a salutary influence upon any emanations arising therefrom. Indifferent as these barracks would be in their present state for permanent occupation, the Government was fortunate in finding at its need during the Mutiny, buildings so easily converted into a residence for soldiers. The water is altogether obtained from wells, and is good and abundant, it is palatable, clear, and does not need filtering. Analysis affords evidence of small quantities of carbonate of magnesia and carbonate of lime.

Rations.

The beef has been good, considering there are no extensive arrangements made for feeding the cattle; they are grass fed; the meat is unquestionably less nutritious than English meat. The mutton has not been nearly so good as the beef; the sheep have been small, and their condition for the most part indifferent. Mutton has been issued as a ration once a week. It would be advisable to issue it twice a week, but then care should be taken in the selection and feeding of the sheep. It is well known there are no fouler feeders in India than sheep; they will eat human excrement freely, even when well fed. Cared for as sheep now are in India, no check whatever is put upon this, as the ground they pass over is usually extensively devoted to cloacina. Vegetables are a serious want during the hot weather; none but indigenous vegetables of a watery character, containing starch and vegetable extractive and but little gluten, can be procured at this season; soldiers, however, usually cook them very badly, merely boiling them, in which state the majority of them are insipid. Benares seems to be but moderately supplied with vegetables.

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* Permanently made.

The gentry of the station can procure excellent vegetables from the public gardens besides what they grow themselves. Attached to the jail for native prisoners there is a very fine garden producing European and native vegetables in abundance, grown by prison labour, and for the use of the prisoners, but the native market is the only source of supply for the soldiers.

Climate.

The climate of Benares is hotter than the upper stations in the North-West Provinces; the hot winds of the south-west monsoon are here felt in April, May, and June, but they are very irregular, and are frequently interrupted by east winds. The rains are not so heavy as in Lower Bengal; though this year the rainfall reached 55·6 inches, the average is stated to be considerably less than this. The rains may be said to commence at the end of June or beginning of July; they are usually ushered in by thunderstorms, and are felt to be most refreshing at first, after the dry, hot season; afterwards when the air becomes still in August and September, they are very relaxing, and as vegetation at this period obtains luxuriance, miasmatic emanations begin to exhibit their prevalence by the invasion of fevers of a periodic character. The cold season cannot be considered to set in here until the end of October, from which time until the middle of March, the weather is very pleasant, though only in December and January can it be accounted bracing. Ice is made in sufficient quantities to afford a supply at a reasonable cost during the entire hot weather to the gentry of the station, and for the use of the Military Hospitals. It results by the evaporation from small quantities of water when the temperature of the atmosphere is reduced as low as 40° Fahrenheit. The hot dry season is usually a healthy period. During the rains, and at their termination, the most prevalent diseases are fevers, dysentery, and hepatic complications; in those years in which cholera prevails it almost invariably presents itself at this or the spring season. In the cold weather, especially at its commencement, congestion and inflammation of the liver are usually encountered. In the North-Western Provinces, cholera seldom epidemically prevails during the cold months.

Healthiness of the Station.

If venereal is exempted, the 2nd Dragoon Guards may be considered to have been very healthy in 1862. But two deaths have occurred at head quarters in an average strength of 320; one death was from remittent fever, with abscess of the liver; the other from delirium tremens; this would give 6·25 per thousand—a less mortality than that of the most favoured districts in England. Were a similar state of salubrity always to be associated with Benares, it would leave little to be desired in this respect; but unfortunately the character a series of years has disclosed as the condition of the generality of stations in India is, that in some years a very small mortality has prevailed, while in others, during a few consecutive years, or at irregular periods, epidemics have appeared and raised the average, when extended to a fixed period of several years, to a very much greater death-rate than the highest mortality at home. 1861 is reputed to have been equally healthy in this station as 1862 has been. Benares bears a very fair character for healthiness; its sanitary reputation is above the average of stations in the plains in this Presidency. On reference to a table published in the 'Indian Annals of Medical Science' for January, 1859, by Dr. Chevers,* the ratio of deaths to 1,000 of strength is reprerented at Benares, for a period of 10 years, ending with 1856, to have been 32·258—a proportion so favourable as to have been reached by few stations in the plains, and to have exceeded in salubrity the average of several of the hill stations. Whatever favourable sanitary condition Benares may obtain, seems independent of the conservancy of the station, to be influenced by the dry nature of the soil, by the cultivation of the surrounding country, by the numerous trees in the station and its vicinity, and by the great facilities for drainage afforded by the Burna river, and also by the Ganges, which latter, in the vicinity of Benares, is contained between high banks which confine it to its natural bed, and prevent marginal flooding in the rains, a fertile source of disease in portions of its course through other districts.

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* This does not refer to the Fort at Rajh Ghaut, the period of occupation of which has probably been too limited to afford decisive results, but the impression is unfavourable in the minds of many as regards its healthiness for European troops.

The only disease that can have been considered as "prevailing" for the last twelve months at the head-quarters 2nd Dragoon Guards, or at least as obtaining any marked prominence, has been venereal; 102 cases of this disease have been treated during the year, which is nearly equal to a third of the strength at head quarters, and is more than double any other source of admission into the Regimental Hospital in the same period. Directing attention to this subject is intended only to include a recapitulation of what has been frequently advocated by Medical Officers; that is, the adoption of some system which would afford a reasonable hope of a mitigation of this serious evil to soldiers in this country. Assuming that the weekly examination of soldiers is always conducted as prescribed, it only provides for the discovery of the disease; it makes little advance towards prophylaxis. It is quite unnecessary here to more than allude to the seriousness of this disease, both as temporarily compromising the efficiency of a large portion of the army at all times, as well as the permanent serious mischief so frequently resulting, laying the foundation for dyscrasic states of the constitution and developing organic disease, disqualifying so many for the duties of soldiers; the gravity of these questions is fully recognised.

If soldiers could be kept from intercourse with loose women altogether, as some have advocated, it would no doubt be the best prophylaxis of all, but it would be a very difficult one to obtain. It has been assumed that this can be accomplished by improving the moral state of the soldier, embracing of course improvement in his general education. It is to be hoped that the promulgators and supporters of such doctrines believe their own suggestions; but has their experience of the lives of young men indiscriminately taken from the adult public justified the expectation of such results? Is it likely that any system of moral training applicable to the various phases of military life would be effectual? Experience of officers in the army, who usually receive an education and moral training far above what can reasonably be expected for the private soldier at the present day, has inculcated the belief that great results cannot be expected from this theory. When women of loose character are forbidden a residence in military cantonments, it is found that no available police force can keep them from coming in at night; when it is recollected that the boundary line of a cantonment may be several miles in circumference, this can be at once understood. Moreover, soldiers could not be effectually restricted from meeting these women beyond the cantonments. Assuming, then, that the prophylaxis of non-association through the conditions advanced is not attainable, the question next presents itself of mitigating the evil whilst permitting association. The most effectual system, it is generally supposed, would be to allow women to reside in sudder or regimental bazaars, to be registered and kept under careful supervision, and when found diseased to send them for treatment to lock hospitals established for the purpose under European control, and not to permit women of this class to reside in cantonments, unless under these restrictions. The details of such a system would require careful arrangement, and no less careful application. The well-known success of registration upon the continent of Europe is always cited in support of these views. On visiting the large military hospital at Mayence, in 1856, I ascertained that on the day of my visit the number of venereal patients in hospital was under four per thousand of the entire strength of the garrison, consisting of several thousand Austrian and Prussian troops.

Opposed to any general system of this kind, is, the custom in England, associated with a widely diffused antagonism upon religious grounds, as encouraging prostitution. It must, however, be borne in mind that none of these women are ever seduced by Europeans; their admission or not into cantonments would probably in no degree affect their number. The other alternative is, admitting these women to dwell in cantonments as other members of the body politic, and without let or hindrance permitting them to follow their occupation, merely providing lock hospitals for the cure of those diseased, voluntarily seeking admission. Without entering in the least into detail, it may be said that efficient lock hospitals could be established and supported at no great expense to the state. If fairly and honestly administered, and the patients made comfortable, it seems contrary to a rational deduction that this provision would not result in a salutary influence in diminishing venereal; nevertheless, it is but fair to admit that for several years lock hospitals were tried in India, and discontinued somewhere about 1835 as not found to answer the intention of their establishment, and the opinion of their inefficiency obtained the support of Medical Officers of experience in this country. It would seem, however, that a chief source of failure was maladministration through native agency, a cause which in these days is hardly explicable, and is most unquestionably one that ought not to be received as completely satisfactory in condemnation of such institutions.

A SKETCH OF THE PHYSICAL AND MEDICAL TOPOGRAPHICAL CHARACTERS, AND OTHER RELATIONS OF THE HILL SANITARIA OF DARJEELING, NYNEE TAL, LANDOUR, AND MURREE, IN THE BENGAL PRESIDENCY.

Darjeeling.

The Sanitarium of Darjeeling is situated on a spur of the second range of the Sikhim Mountains, running in a northerly direction, it has an elevation of 7,600 feet above the sea, and is placed on the crest and western face of a hill known as Jellapahar or "Burnt Mountain," in latitude 27° 2′ N., and in longitude 88° 6′ E., and is about 35 miles by the regular mountain road from the nearest part of the plains. Its boundaries are Darjeeling, Sikhim, and the snowy range on the north, the Terai and intervening mountains on the south, Bohlan on the east, and Nepaul on the west; the mountains to the south, south-east, and south-west, have an elevation of from 9,000 to 10,000 feet. The Sanitarium stands between 500 and 600 feet higher than the Station proper of Darjeeling, distant about one mile and a-half in a northerly direction. The snowy range of the Himalayas is seen, presenting a varied elevation, at a distance north and north-west of between 40 and 50 miles. The eastern side of the Jellapahar ridge is very steep; it runs into the narrow valley of Jungroo, some 3,000 feet lower down; the western side is not quite so steep as the eastern.

The geological condition is said to be, gneiss with granite cropping out. The soil is clay, a mixture of the debris of the rocks with vegetable humus. These hills were at one time thickly wooded, but of late have been considerably denuded of trees for the purpose of employing the ground for tea plantations. Tea is extensively cultivated in the vicinity, under European supervision, and is found to be a lucrative occupation. Trees are still, however, pretty numerous, and the vegetation, especially in the valleys, during and at the close of the rainy season, is very great. The growth of underwood is found very objectionable as affording sources of malaria, and is removed as much as possible; but trees, when not too abundant, amongst other advantages, tend to cool the atmosphere during the hot weather by preventing the heating of the ground by the direct rays of the sun, and by the vital action of their leaves causing evaporation, and the extension of the leaves and branches increase the amount of surface cooled by radiation. The cultivation of ordinary crops by the natives in the immediate neighbourhood of the Station is not extensive. Supplies are chiefly obtained from the plains.

Assistant-Surgeon Kidd, of the 27th Regiment, in his Report of this Station for 1862 observes—"The year may be divided into two seasons, the rainy and dry, the former beginning in May and terminating in October, the latter extending from the middle of October to the middle of May. During the rainy season the temperature is uniformly mild and equable, the range of the thermometer during the six months of the rains averaging 7·33°, the average fall of rain in the last five years has been 125 inches; clouds and mist prevail in the rainy season and are frequent also during the cold weather; hoarfrost is observable every morning during December, January, and February; snow occasionally falls in these months, but in light showers, and does not lie long." The average temperature of what may be called the five winter months is 46°, and the greatest variation in twenty-four hours 12°. The winter, compared with this season in Europe, is very mild. It is stated that at Darjeeling in winter English vegetables are in perfection, peas are in flower, and the season is most enjoyable.

From the position of the Depôt on the spur of a hill presenting such a steep descent on either side, the natural drainage prevents any lodgment of water during the rains. Assistant-Surgeon Kidd further observes that—"among the European residents there may be said to be no epidemic disease: the records of the hospital furnish no evidence of there ever having been any epidemic among the troops. Small pox prevails amongst the natives in the summer and autumn, also occasional cases of cholera and dysentery with low fever, but chiefly amongst those natives who arrive in the Station from the plains at this season, having passed through the Terai at the foot of the hills, which is extremely unhealthy during the latter end of the rains, and for some weeks afterwards."

In affording conclusions from the experience of service at Darjeeling, medical officers seem clearly impressed with the advantage derivable by invalids labouring under certain forms of disease from a sojourn there, but this question will be further alluded to in the concluding remarks upon the sanitaria, founded upon the reports and returns available for reference.

The barrack accommodation is not minutely detailed in recent reports; it can be collected, however, that the buildings are ordinary bungalows, with sloping roofs and verandahs; the ventilation is through doors, windows over the doors, and chimneys; it is not considered good. Three bungalows are constructed for single and two for married men. Each single bungalow is divided into two large rooms with two non-commissioned officers' rooms and ablution rooms at either end. Each large room has a fire-place at either end, and is intended to accommodate 20 men: the married men's bungalows afford each family two rooms. The entire barracks can accommodate somewhat more than 130 men, with a proportion of women and children. During the year under review an average of $109\frac{5}{12}$ men occupied the barracks, obtaining 806 cubic feet per man. The superficial area is described as too limited. Fires are kept burning all the year round; the barrack buildings are not considered as well adapted for the hills as they might be, they too much resemble bungalows in the plains, where it is an object to exclude sunshine, heat, and glare as much as possible.

The hospital differs in size from the men's bungalows, but is similar in shape and arrangements; it affords sufficient space, but is open to the same objections that attach to the barracks. The ablution-rooms are ample as to number and size, but somewhat defective in arrangement. The latrines and local means of sanitation are capable of considerable improvement.

The water is said to be of fair quality; during the dry season, however, it is necessary to bring it from a good deal a lower level than in the rains; the supply is derived from springs, its analysis is not given, but a recommendation is general that it should be filtered.

During the year 1862, mutton was issued on 14, pork on 3, and beef on 348 days. With regard to this it is observed by the medical officer in charge with some reason that there "is too much sameness in the character of the meat ration." If mutton cannot be procured, he suggests the more frequent use of fresh pork, which can be obtained of good quality, as the breed of pigs is much finer in the hills than in the plains, and the mode of feeding is not open to the same objections as in the latter locality. European vegetables can be grown to any reasonable amount, especially potatoes, of the finest quality, at the Hill Sanitaria generally, wherefore no valid reason could be advanced to justify the least scarcity of these essential articles of diet, which in truth are an absolute luxury to those who have resided long in the plains.

Barracks have been built for the location of an European regiment at Senchal, about five miles from Darjeeling and three from the Depôt. No accurate description of the Station has been supplied beyond the fact of its greater elevation than Darjeeling, being over 8,000 feet above the sea level. It is said to be colder than Darjeeling and more exposed, and in consequence, it is presumed, will be found somewhat trying to Europeans who may have dwelt several hot seasons in the plains, but until some years of occupation shall have afforded reliable data, the suitableness or the reverse of Senchal to fulfil the intention of its selection can be only a matter of opinion.

Assistant-Surgeon Maclean, of the 42nd Regiment, in medical charge of Darjeeling Convalescent Depôt in 1859, in a special Report upon the Station for that year, speaks very favourably of a locality named Curzion in the vicinity of the Depôt; he says—"it has an elevation of from 5,000 to 6,000 feet above the level of the sea, its climate is temperately mild, and, except during the rainy season, is dry and clear. There is of terrace ground here, having a northerly and north-western aspect, and sheltered from the summer monsoon, enough upon which to locate several thousand men. The water supply is good and plentiful; there is enough of durable and easily worked stone for the construction of any number of buildings, and of wood of the most suitable building kind there is no lack. I would earnestly recommend Curzion as the best place I know of as a Station for European troops in this part of the Himalaya range. Jellapahar and Senchal are respectively about 33 and 36 miles from the plains, Curzion is not half the distance of either. The expense of hill transit to the present Depôt is said to be great; from the plains to Curzion it would be much diminished. At Senchal or Jellapahar there is no room for exercising the men; at Curzion a division or more might with ease be drilled."

NYNEE TAL.

The station of Nynee Tal is situated in a valley of the Himalayas and is south-west of Almorah, in the hills, and north-east of Meerut, and nearly due north of Moradabad and Bareilly, in the plains; its more immediate boundaries include on the north Cheenur, on the south the hills separating it from the plains of Huldwanee, on the east Sheer Madanda, and on the west Cyopattra. The centre of the valley is occupied by a lake, which is fed by springs and mountain streams. As the sides of the hills, more especially the northern, are in a great measure studded with houses, and present a pleasingly diverse character from the projecting spurs and intermediate glens covered for the most part by a varied and beautiful foliage, this valley combines features of singular beauty and great interest. The lake is about a mile long, by half a-mile in breadth, the long axis is north and south, it discharges its waters into the plains through a narrow gorge at its southern extremity. The station may be described as surrounded by hills forming with the lake, a complete basin, in which there are only two entrances for direct currents of air, the one on the north-west between Cyopattra and Cheenur, and the other the narrow gorge of the south, hence the prevailing and influential winds are either north and north-west, or south and south-west. Nynee Tal stands at an elevation of 6,409 feet above the level of the sea. From various reports upon this station the statements are nearly universal as to the large amount of jungle, both tree and underwood, which everywhere prevails. It is deemed an essential measure in the sanitation of Nynee Tal, that this jungle should be kept down, and removed altogether in many localities. The situation of bazaars and the absence of native latrines seem to be remarkably objectionable features, and to found just sources of reprehension.

The barracks are denominated "The Near," or "Hospital," and the "Kail Khan;" the former are situated in the centre of the gorge at the south end of the lake, below its level, and are disadvantageous in many respects; they are low, damp, and gloomy, surrounded by trees and rocks, and are presumed to be in a malarious position, as if malaria ascends by the gorge, they are obnoxious to its influence. It is supposed, however, that they will be disused as soon as the new barracks are completed, now in course of construction. The "Khail Khan" barracks are well situated about a mile farther out on the summit and sides of a ridge; the temporary buildings are, however, very indifferent; they are described as in nearly all respects defective, and as diminishing the beneficial effects likely to result to invalids from a residence in the hills. The barrack accommodation may be considered in a transition state, and when the new permanent barracks and hospital are completed, it is confidently expected that the wants of Nynee Tal in this respect will be well provided for. The barracks heretofore have been considered capable of accommodating over 800 men.

The water supply in the year under review is alluded to by Assistant-

Surgeon Guthrie, of the 3rd Battalion Rifle Brigade, in the following terms:—"There is a great improvement since last season in the means by which the water is conveyed from the lake to the barracks; it was formerly carried in open wooden troughs, which were constantly getting out of repair: it is now conveyed to barracks by iron pipes. The original intention was to run the pipes into the middle of the lake, thereby getting the water in its greatest purity, but this was given up as there were serious engineering difficulties to contend with, another proposition, and one that can be carried into force at any future period, is to carry the pipes along the side of the lake to some distance from the bazaar, and clear of all its impurities. At present the end of the pipe is some twenty paces from the lake, the water is conveyed to it by an open water course; intermediately there is a reservoir, where the water, if considered necessary, can be thoroughly filtered, and I think this ought to be done, as it would entail no great expense. The supply of water is abundant, and I believe at present good; of course its source, the lake, is still open to the same objection as was made regarding it last year, viz., that it is the receptacle of the greater part of the drainage of the bazaar and station, especially during the heavy and continued rains in the wet season."

Other medical officers, while remarking the fact of pollution of the waters of the lake, express the opinion that as its sources are chiefly springs always flowing, and also from the circumstance of its great size, the impurities are not so prominently adverse to the condition of the water as might be supposed; still, however, they all recommend other sources apart from the lake to be sought for the water supply, and in the meantime advise filtration, and the formation of washing places for the natives in certain localities.

The climate of Nynee Tall, the late Assistant-Surgeon Pinkerton, of the Royal Artillery, observed, is for eight months of the year clear, bracing, and invigorating. This season lasts from the end of the rains (20th September) to the end of May. The more relaxing and less healthy period may be considered to embrace from June to the 20th September; January is clear, cold, and frosty, with snow; February is much the same; March is cold, with severe winds; April is boisterous, gales, and thunder-storms; May is fine, warm, with occasional showers; June is almost constantly cloudy, rainy, and windy; July is hot, damp, and rainy: August is misty and damp: September, towards the latter end, clears up to settled weather; while October, November, and December, are delightfully clear and bracing.

According to observations made for several years with great accuracy by General Sir W. Richards, K.C.B.—

219 days in the year are generally fine.
68 " " " cloudy.
76 " " " rain, hail, or snow.

The average fall of rain for the year is 112 inches; the greatest quantity recorded fell in 1853, amounting to 144·465 inches; the smallest quantity observed fell in 1848, equalling 68·015 inches.

The average temperature at 2 P.M. is 64°, at dawn 51°; the highest ever marked in the shade is 80°; the lowest 18° Fahr. During the winter the daily variation is considerable, but in the summer never above 6° in the twenty-four hours.

Dr. Pinkerton has been very distinct in the expression of his opinion as to the advantages of Nynee Tal as a residence for sick men; his views combat the implication that hill stations are little more than prophylactic in the management of Europeans; he deduced from his experience that where organic disease does not prevail to any serious extent, the climate is well adapted to the treatment of certain diseases. This applies chiefly to the cold and dry months, but even in the wet season, he inculcated that to state this period to be of no benefit to sick men is an error. Moreover, though many invalids gain nothing during its continuance they lose nothing; still more, had they remained in the plains they would have lost all chance of recovery, whereas in the hills though not gaining, they lose no ground, and immediately after the settled bracing weather sets in, improve remarkably. And that the main requirements to obtain such benfiecial results are good accommodation, and other sanitary conditions admitting of application, and a judicious selection of invalids in the plains.

TOPOGRAPHICAL AND SANITARY REPORT ON LANDOUR.

By Ludovick C. Stewart, Staff Surgeon-Major.

Landour, for many years the only hill sanitarium for troops in India, and still one of the most important, is situated in the north-west Himalayas in latitude 30° 27′ N., longitude 78° 5′ E, and occupies a portion of that lower range of mountains, intermediate between the Sewalik hills and the Snowy Range. From the former it is separated by the beautiful valley of the Dhoon, a great part of which is under cultivation, containing numerous tea plantations, many villages, and the town of Deyrah with the cantonment of the Goorkah Regiment there stationed. The valley is watered by several considerable rivers, tributaries to the Ganges and the Jumna, and by branches of the great system of canals of the district. It contains, besides, magnificent tracts of that primeval forest, which skirts the base of the hills for hundreds of miles.

It is in this, the lower range of the great Himalayan chain, that all the hill stations and sanitaria are situated. To the west of Landour, and distant about one hundred miles, are Simla, Kussowlie, Dugshai, and Subathoo, and eastward are Nynee Tal and Almorah.

Landour is distant from Meerut, the head-quarters of the Division, 108 miles; from Saharunpore, a large civil station, about 40; and from Roorkee, the nearest quarters for British troops, about 30 miles; the town of Deyrah is about 14 miles by road; and Rajpore, at the foot of the hills, is 9 miles distant.

The elevation of the highest of the Landour Barracks is 7580 feet, the valley of the Dhoon being something more than 2000 feet above sea level. The Station is reached from the plains by a tolerable road, through a pass in the Sewalik range, on through the valley of the Dhoon to Rajpore, whence the ascent is by bridle-road only, cut along the face of the hills in numerous zigzags and windings.

There is no table-land on these mountains. The general appearance is a series of hills towering one above another in every shape, with deep valleys between, and steep precipices, or long sloping banks, or *Khuds*, down which trickle numerous rivulets, which become foaming torrents in the rainy season. Roads, sites for houses, patches of garden, &c., have to be cut out of the face of the hill.

From Landour, looking south, you have the beautiful valley of the Dhoon at your feet, beyond which is the Sewalik Range (rich in fossil remains), and far beyond this, the sultry plains, in which to the east and west may be distinguished the Ganges and Jumna, &c., like silver threads in the far distance. To the north, and separated by a confused mass of mountain, much of which is densely wooded, is the Snowy Range, the most conspicuous peaks, or rather series af peaks, of which are Gangoutri, Jumnootri, Kidranath, and Budranath, in height from 18,000 to 22,000 feet. Among these magnificent mountains, the Ganges, the Jumna, the Tonse, and many of their feeders, take their rise, and in other stupendous ranges to the north-west and south-east respectively, are the sources of the Sutlej, the Indus, &c.

The geological formation of this portion of the lower Himalayas is chiefly clay-slate and limestone. The clay-slate varies much in texture, from large slabs to variously-coloured crumbling masses. It often contains quartz. The limestone likewise varies much in appearance, being either hard and compact of different hues, in vast chaotic masses, or chalky or crystallized in spar, or in the form of a sulphate, of which many fine and pure beds exist close to Landour. There are beds of sandstone and of marl, rich in organic remains, also in the neighbourhood, and traces of primary rock chiefly along the water-courses. Granite or veins of trap, chiefly greenstone, being met with on the peaks, or as boulders in the deep valleys.

Iron-ore in several varieties, copper, and lead, are found in the neighbourhood, but not worked.

These hills are more or less wooded. Landour itself rather sparsely. The most conspicuous forest trees are the *rhododendron arboreum*, *quercus incana*, *andromeda ovalifolia*, *pinus longifolia*, and an *alnus*. The lower growth consists chiefly of species of *rubus*, *rosa*, *ilex*, *berberis*, *punica*, *lonicera*, &c., among shrubs; while among the herbage, are (besides rank *grasses* and *ferns* clothing the hill sides), species of *rumex*, *urtica*, *cannabis*, *anemone*, *potentilla*, *clematis*, *saxifraga ranunculus*, *thalictrum*, *oxalis*, *primula viola*, *bigonia*, and numerous beautiful *orchids*, and other perennials of tropical type. The number of European and British forms in the flora of these regions is remarkable. The moderate temperature due to a high elevation, furnishes a vegetation like that of other cool climates, while in descending the hills, and in the moist forests at their base, numerous strictly tropical genera abound, and many plants, intermediate between the hardy northern and the delicate tropical flora, are met with.

Among the most interesting plants to be very briefly noted we find the following:—

Vitis.—The grape vine is not cultivated in the hill ranges, nor in the Dhoon valley, although it is believed it would thrive in the latter district; but various beautiful species abound on the hills, as *V. Capreolata*, and *V. Macrophylla*, from which a preparation is made, a good deal used in Hindoo medicine.

Cannabis Indica.—Indian hemp is abundant, growing rankly at Landour. Its tenacious fibre is much employed for cordage, and *bhang* or *churrus*, a well-known intoxicating preparation, expressed from the leaves by hand, is in great demand by the natives.

Gentiana.—Of this genus several beautiful examples are common, abounding in bitter principle.

Cucumis.—Various species producing colocynth are found, chiefly at the foot of the hills.

Punica.—The pomegranate grows plentifully on the slopes of the hills. The bark of the root is much used as a vermifuge.

Rosa.—A white climbing rose, *R. Brunoni*, is very common at Landour, gining the tops of lofty trees, and hanging down in clusters.

Rubus.—Numerous species, black and yellow raspberry, ripening at different seasons, with wild cherries, currants, and other fruits, among which the most abundant is the apricot, which is much used both as a fruit and for the oil produced by the kernel; walnuts are also abundant in the neighbourhood.

Solanum.—The potato was introduced here and at Simla many years ago. It is cultivated very largely by the natives, and is of excellent quality.

Datura.—Several species very common.

Rheum.—Several kinds, some growing at a high elevation, and imported from Chinese Tartary, with borax, musk, &c., important articles of commerce.

Primula.—Various beautiful examples, extending to 12,000 feet, some of which appear in bloom just as the winter snows melt.

Of *Scrophularineæ* are many European forms, as *euphrasia*, *verbascum*, *veronica*, *pedicularis*.

Of *Labiatæ*, *mentha*, *origanum*, *ajuga*, *prunella*, *lamium*, and English *thyme*.

Of *Acer* and *Rhamnus*, several species.

Of *Boragineæ*, many European and British examples.

Of the *mulberry*, several fine species (each supporting a distinct kind of silk-spinning worm), are found both in the hills and at their base.

Quercus.—Three or four abound, but only one example at Landour; (*Q. incana*) exceedingly common, but of little value as timber.

Pinus.—Only one species found at Landour, *P. longifolia*, the cheer pine. It yields excellent turpentine, and the wood, though soft, is very useful as deal. The *deodar* grows at a short distance from the Station, as well as several other stately pines, also species of *yew*, *juniper*, &c.

Orchids.—Are abundant, and though most prominent in the tropics, are yet very common in such localities as Landour, where there is a regular rainy season, when they are numerous as species and individuals, terrestrial and epiphytic, as *dendrobium alpestre*, and the beautiful *cœlogyne præcox* growing on oaks, &c., &c. *Salep misree*, a highly nutritiou sarticle of diet, is prepared from the tubers of various species of orchis, and one very good kind from *culophia herbacea*, a numerous species at Landour.

Of *Compositæ*.—Representatives of many British genera occur in the hills, such as *senecio, taraxacum, artemesia, gnaphalium, tanacetum,* several being as species identical with our well-known English plants, and most of them yielding a bitter principle, used medicinally.

Among the more valuable trees met with at the foot of the hills are the *shorea robusta*, or *sāl*, forming vast tracts of forest, the best timber in India, and *ægle marmelos*, the báel, the fruit of which made into preserve or sherbet is excellent in chronic diarrhœa, and very largely used by natives as well as Europeans.

Among the gramineæ many British forms occur about Landour, *e. g.*, *dactylis, poa, agrostis, phleum,* in familiar species, forming good grazing sward, while at the base of the mountains large tracts of gigantic grasses, *andropogon,* &c., are annually burnt down, and the tender shoots, which soon spring up, form excellent pasture.

Of *Ferns*.—The genera and species are numerous. I possess over 70 different kinds, chiefly from the immediate vicinity of Landour, and many more from the Dhoon valley and forest.

On the hills, with the periodic rains, appear many beautiful epidendral ferns. At this season the boles and branches of the oak and rhododendron trees are clad with a lovely verdure, consisting chiefly of gracefully hanging *ferns*, with *orchids, sedum, lycopodium, mosses,* &c.

The terraces on the hill sides grow the ordinary cereal crops, as well as very *fine opium, turmeric, rice* in patches, *millet, maize,* and *tobacco ;* but a great proportion of the grain for man and beast in these hills has to be imported from the Dhoon in exchange for hill produce, such as potatoes and various fruits.

The valley of the Dhoon, in common with the other districts at the foot of the Himalayas, has a climate, and consequently a vegetation, which partakes remarkably of torrid and temperate form. It is on the whole a humid climate ; much forest and jungle exist, and its propinquity to the mountain ranges has an influence on the atmospheric phenomena. The mornings and evenings are usually cool throughout the year, although the winds do not blow so free as in the plains. In the cold season the climate is charming.

The climate of Landour is, as a whole, delightful, and in the various seasons remarkably equable. The eastern proverb, " Its warmth is not heat ; its coolness is not cold," is especially applicable. There is no inordinate summer heat, and the breeze blowing from the higher ranges, and the valleys, tempers even what would otherwise be called hot. The rains however are to say the least disagreeable.

Many people have remarked the calmness and stillness of the summer mornings at Landour and Mussoorie, accompanied by a dry hazy atmosphere. The sun soon shoots up, and the greatest heat felt (though perfectly endurable) is up to about 11 A.M., after which there is no sensible increase, as on the plains. This is explained (?) as due to the setting in of a cooling breeze from the plains, the air becoming rarified, in passing over the tops of the intervening ranges. At night an alternating cool breeze sets in from the snowy range.

The barometric range is small, but there is a daily periodic fluctuation. The barometer reads highest as a rule about 10 A.M., and lowest about 4 P.M. I have not by me any tabulated meteorological observations of my own. (On assuming charge of the depôt early in 1860, I found that most of the valuable instruments had been recently broken, *not, I believe, by accident.*) I annex, however, a Table, the result of careful observations kept at the neighbouring Station of Mussoorie, during two years, which will give a pretty good idea of the temperature, &c. A small correction is necessary for the greater elevation of Landour, but various circumstances will, of course, influence it during different seasons, such as the early or late setting in of the periodic rains, their duration and amount, the severity of the winter, snow-fall, &c. To exemplify this I may mention that the winter of 1850–51 was the most severe experienced in these hills for twenty-five years. Snow fell almost without interruption for nine days in January, and lay for weeks ; the roads were impassable, and the communication with the plains was stopped for a time. Many natives perished in the drift, and I found numerous small mammalia, mice, shrews, &c., dead on the surface of the snow, and numbers of Alpine birds were driven down to the Dhoon. Again, the usual rain-fall is about 85 inches. In 1860 the rain commenced unusually early, and lasted, with short breaks, to the end of September, giving a total of 140 inches for that year.

The seasons may be conveniently divided into the spring and summer (in one), the rainy and the cold Spring may be said to commence in March, and gradually merges into summer. During this season is the greatest heat, but as there is little radiation it is always cool in the shade, or on the north side of the hills, though the sun is powerful enough to render a protection to the head, and light clothing, desirable. The weather is tempered by the cooling breeze from the Dhoon by day, and from the snowy range by night. Visitors from the plains, on sick or other leave, usually arrive at the sanitarium in March and April, and apart from the glory of the landscape and the exhilarating effects of the climate, few things will strike the senses of one *fresh* from the arid plains more gratefully in ascending to these regions than the reappearance of familiar British forms in the flora and fauna. Numerous trees and flowers are met with to remind one of home, such as *pines* and *oaks, holly, ivy, honeysuckle*, and *wild rose*, with *violets, saxifrages, potentillas, geraniums, anemones*, and *buttercups.* Among the birds, the English cuckoo and missel thrush, and other thrushes, with species of titmouse, jay, &c., abound in summer, while in winter among the visitors are the Himalayan bullfinch and goldfinch, and the English woodcock, all driven down by the snows. The glowworm and other familiar insects are also found at various seasons.

About the middle of June, and ushered in usually by terrific thunderstorms, the rains set in, lasting well into September, August being the wettest month of the year. The temperature at this season is very equable, but it is on the whole disagreeable from the necessary confinement (at least of idle people) to the house.

Slight attacks of diarrhœa are then rather common, and relapses of intermittent fever contracted on the plains.

The breaks in the rains are delightful, and the views of the snowy range on the one hand, and of the valley of the Dhoon and the plains beyond, when the masses of mist and cloud are rolled up and dispelled, are incomparably grand and beautiful.

The transition from the so-called hot, to the rainy weather, at Landour is not marked by any considerable fall of temperature.

The trees in the rains, particularly the *oaks* and *rhododendrons*, are clothed with luxuriant masses of ferns of many species, which hang in graceful festoons from all the moss-clad branches, interspersed with various beautiful *orchids* and other epiphytic plants, which wither before the accession of the cold season.

Few birds are seen or heard in the rains. Several species of *redstart* remain, either by the mountain torrents or in the slopes of the hills; also some wagtails and a beautiful *Enicurus*. The Himalayan *tree-creeper*, and the *nuthatch*, with four or five kinds of *woodpecker*, small flocks of several species of *parus*, and a bulbul (*Pycnonotus leucogenys*), the common *kite* of the plains, and the carrion crow (*c. culminatus*) abound at all seasons, as also the *jay*, (*garrulus lanceolatus*), and two or three *babblers*, the *sparrow* and the *mynah*, while one of the most conspicuous features in the landscape is the great bearded vulture, (*gypaetus barbatus*), as he soars above the deep valleys, or quests along the sides of the mountains; but the scarcity of birds, as compared with the rest of the year, is remarkable during the monsoon.

The cold weather sets in very gradually about October, which with November, partakes of the most beautiful climate imaginable. The sky is deep blue and unclouded, and the elasticity of the air, and its invigorating effects are remarkable. This is the best time for invalids. The greatest cold is felt in December and January. Hail and snow-storms are then frequent, and the shaded parts of the hill are generally covered with frost and ice.

Most of the visitors and residents return to the plains about the beginning of November, and most of the shopkeepers and tradesmen desert the bazaars, which in mid-winter are nearly empty.

About November, but varying according to the temperature of the higher ranges, whence they are driven down, the winter birds make their appearance, such as the Himalayan *goldfinch, bullfinch*, and *siskin* (*carduelis caniceps*, *pyrrhula erythrocephala*, and *chrysomitris spinoides.)* Several *thrushes* and other berry-eating birds, the *yellow hawfinch*, several *linnets*, &c., &c., and among mammalia, the beautiful Himalayan fox, (*vulpes montana*,) and a flying squirrel, (*sciuropterus magnificus*,) make their appearance, and the summer birds migrate to the Dhoon to return at the season of pairing.

From the list of the mammalia, and more especially of the birds procured in the neighbourhood, appended to this Report,[*] it will be seen how much the fauna of this Alpine region partakes of that of the tropics, and it is an interesting fact as bearing on their geographical distribution, that many birds whose usual habitat is the moist hot region of Lower Bengal, Assam, &c., are also met with in that portion of the great sub-Himalayan forest which verges on the range of mountain now referred to, but not as far as I know in any intermediate district, *e. g.*, *picus pulverulentus*, *chrysocolaptes goensis*, *nectarinia saturata*, and *n. gouldiæ*, *pitta cucullata*, *dendrochelidon coronatus*, and several others.

TABLE showing the Result of Meteorological Observations taken at Mussoorie, in the North-west Himalayas during two years.

	Mean of all the Observations.	Maximum during each Month.	Minimum during each Month.	Means of Maximum and Minimum.	Increase and Decrease of each Month.
January	42·45	51·5	34·5	43·	−2·55
February	45·42	63·	27·	45·	+2·97
March	53·63	69·	37·	53·	+8·21
April	59·83	77·	41·	59·	+6·2
May	66·01	78·	41·	59·	+6·18
June	67·12	74·	61·	67·5	+1·11
July	67·35	71·	63·	67·5	−0·23
August	66·43	69·	63·	66·	−0·92
September	64·04	69·5	57·	63·25	−2·39
October	57·25	66·5	49·	57·25	−6·79
November	50·	57·	48·	52·5	−7·25
December	45·	55·	29·	42·	−5·
Mean Temperature of the Year	57·04	..	..	56·5	..

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[*] The space in this book for sanitary matters connected with the Army being limited, it was deemed inexpedient to publish the list here alluded to.

RESULT of Meteorological Observations taken at Landour during one Season.

	Temperature of Air.							Dry and Wet Bulb.		Mean deduced Dew Point.	Mean Degree of Humidity.	Rain.		Wind.		Cloud.	
	Highest in Month.	Lowest in Month.	Range in Month.	Mean of all highest.	Mean of all Lowest.	Mean Daily Range.	Approximate Mean for the Month.	Mean of Dry Bulb.	Mean of Wet Bulb.			Number of Days it fell.	Amount collected.	General Direction.	Estimated Strength.	A.M. 0–10.	P.M. 0–10.
	°	°	°	°	°	°	°	°	°	°	°		In.				
January ..	50	15	35	42	29	13	34	35	33	25·3	·751	..	..	N.W.	..	Ni.	Ni.
February ..	63	29	34	48	38	12	38	43	36	34·3	·750	1	0·30	W.	..	Clear	
March ..	71	31	40	56	38	17	44	46	42	36·3	·745	4	2·55	S.W.	..	Ci.	Fine
April ..	82	46	36	73	54	18	58	61	54	49·1	·668	4	0·90	S.W.	..	Ci.	Ci.
May	83	40	44	74	53	22	58	60	55	50·8	·710	11	4·04	W.	..	Ni.	Ni.
June ..	88	52	26	75	58	18	63	65	62	60·2	·851	15	10·86	W.	..	Ni.	Ni.
July	82	57	25	75	60	13	62	65	63	63·4	·947	31	34·36	W.S.W	..	Ni.	Ni.
August ..	84	56	28	75	58	16	63	64	63	63·4	·947	26	37·75	S.W.	..	Ni.	Ni.
September ..	80	53	27	72	56	16	61	62	61	63·3	·946	23	7·85	S.W.	..	Ni.	Ni.
October ..	73	40	23	65	50	15	56	57	65	54·4	·899	11	3·40	S.W.	..	Clear	
November ..	63	31	32	53	40	14	43	44	42	38·6	·829	1	0·15	S.W.	..	Clear	
December ..	59	27	32	48	35	14	38	40	36	35·4	·763	1	0·05	S.W.	..	Clear	
Mean ..	73	39	32	63	47	15	51	53	50	47·4	·817	128	102·	S.W.	..	Ni.	Ni.

The sanitarium of Landour stands on a range of hills elevated over 7000 feet, running east and west. The barracks for the invalids are chiefly situated on the highest of three hills, forming the station, and the hospital is at the extreme end, on the lowest hill, occupyinga piece of terraced ground.

Landour is separated from Mussoorie merely by a long straggling bazaar, which is about 600 feet below the upper barracks. Mussoorie is a fashionable retreat for officers and others during summer. It contains no troops. It is much more extensive, and more populous than Landour, and is always crowded during the season. There is a good club-house and other public resorts. The climate is not so bracing, nor is it in as good a sanitary condition, I believe, as Landour, but it is deservedly a very favourite summer residence.

The barracks were built in 1828-30, when the Convalescent Depôt was established. The accommodation consists of six barracks and six bungalows, all detached. The latter were originally appropriated for officers' quarters, but have been occupied by the men for many years. These buildings are studded over the south face of the hill and on the ridge, at different elevations, the highest being about 500 feet above the lowest, which is only a short way above the bazaar. There is no exception to be taken to the salubrity of the position of any of these buildings, although the upper ones are thought to be somewhat exposed; but I consider this no valid objection, as in winter the strength of the depôt being at its minimum, the occupants are usually moved to the lower and least exposed barracks.

They are substantially built of stone and lime, plastered inside and out, with thatched roofs and terraced floors, and variously divided in the way of accommodation.

The usual appropriation of space of the large buildings is one large and several smaller rooms, the latter at each corner of the verandahs, facing north and south.

The central room measures 50 feet by 20 feet, and 20 feet in height. The smaller are about 10 feet square, and in some there are additional rooms for the non-commissioned officers or families.

These barracks can accommodate on an average twenty-eight men each. The bungalows are usually told off to about 16 men each, or otherwise appropriated by the married people. They consist each of a pretty good centre room, with small corner ones, and verandah on two sides.

I think the construction of all these buildings is faulty, according to modern ideas. There is no special ventilation (except in a couple of them) unless by the doors and windows, and the chimneys, which by the way smoke inveterately. The small side rooms are barely habitable in the rains and winter from damp. The windows are opposite, and open inwards, with Venetian shutters opening outwards. Those not protected by verandahs have no Venetians, however. In the small rooms the doors are on one side, the windows on the other. In two of the large barracks there is incomplete roof or ridge ventilation besides. No doubt all this is defective, but without entirely remodelling, or rather reconstructing, the barracks, any alteration would be of little use. The best plan is to put fewer men into the rooms, so as to give more superficial space, the pitch of roof being adequate. The buildings have all sufficient basement elevation, being properly raised from the ground; but they are not flued underneath.

I believe it is under consideration to pull down the whole of the barracks, and build a new range on the same or other sites. I trust they will not be crowded together, as at Kussowlie and Murree. It is much better to have the men at a sanitarium in detached buildings, scattered over the hill in bungalows holding twenty-five men each, than to stow them in more pretentious buildings in large numbers, where, if any epidemic should break out, it is difficult to be got rid of, witness the cholera epidemic at Murree in 1858, and at Kussowlie some years before.

To each of the large barracks is attached a very good lavatory, fully equipped with all appliances for ablution, *except water*, which fails in the dry season, or runs very short. It has to be brought by mules (of which sixty are employed) from a distance of a mile and a-half up a steep hill from the spring. The water is of excellent quality, and always in sufficient quantity for ordinary purposes and for ablution, except for a couple of months or so in the year. Small tanks or reservoirs might be constructed at a moderate expense to store the rain-fall in sufficient quantity. The bath-room water flows off at each end towards the slope of the hill, and is also eagerly collected by such of the men as cultivate patches of garden about the barracks.

In cases of emergency, one or more private houses are rented, by the season, for the accommodation of the troops.

In 1860 a barrack was struck by lightning, one man was killed, and several injured. A similar accident, also with fatal effect, had occurred in 1852 in the same barrack, which is the most exposed of all, being perched on the highest part of the hill. On the last occasion, it was thought desirable to move the men from this position, and they were temporarily lodged in the racket court till sanction was obtained to rent a house for them. I believe this exposed barrack has not since been occupied by troops. Lightning conductors were furnished for each of the public buildings, the following year, at a great expense.

From the position of the barracks on the summit or slopes of the hills no artificial drainage is needed, the natural lay of the ground being sufficient to carry all the surface water down the surrounding ravines and gulleys into the mountain torrents below; and during the heavy rains it is necessary to pay great attention to the state of the channels, to see that they are not dammed up, as a bank may in a very short time be undermined, or a road fall in, as frequently happens.

The general conservancy arrangements at the depôt were satisfactory wher I was there, so far as connected with the barrack latrines, urinals, &c., &c. but a good deal was needed as regards the sanitation of the place generally.

The most pressing want, and one which had been felt and represented repeatedly, was *a set of public latrines for the natives,* who are in the habit of resorting to the hill-side under the public roads, in several situations. In 1860 I think matters went so far that the site for one large latrine (for camp followers and occupants of a mean bazaar near the upper barracks) was fixed upon, and I believe the estimates went in, but nothing, I am informed, has been yet accomplished.

In that same year, after much correspondence, a small conservancy establishment was sanctioned for the depôt. This consisted of half a-dozen sweepers, who were placed at the disposal of the Medical Officer, under charge of a non-commissioned officer. Their duty was to come daily for orders, and they were usually employed in removing all manner of nuisance to a distance, where it was burned, if practicable, or buried and earthed over. The spots where the natives chiefly frequented were systematically covered with a couple of feet of earth, and quick-lime was plentifully used.

As all private houses have a separate cloaca, or deposit for filth, usually some "sequestered spot," a little distance down the hill, the sweepers were made to visit these places periodically, and to see that due attention was paid to have nuisances removed or buried.

Besides the work done by this conservancy establishment, the Barrack-master's department were held responsible for the cleanliness and proper conservancy of the immediate vicinity of the barracks, and private residents and householders for the same as regards their own domains; and for the bazaar a small establishment was kept up for similar purposes, who were paid by a house-tax.

It is worth while, I think, to mention the above, for in all the recent reports to which I have had access on the hill and other Stations in India, much stress is laid on the total want of sanitary arrangements. Indeed any one not knowing better would naturally infer that military, and especially medical authorities, ignored the value of proper sanitation in all its details, or were most grieviously neglectful of their duties.

The men's latrines are at a sufficient distance from their barracks, and *with due supervision* are seldom offensive. The contents are removed by hand daily (there are no carriages of any kind, or carts *possible* on these hills) by sweepers, and deposited beyond the boundary of cantonments, and then and there buried. The use of quick-lime tends to correct offensive odours, and nets full of pounded charcoal are here and there suspended about the latrines. These conveniences are faulty in construction, being of the old formation, but they are incapable of improvement, and should be replaced by new ones. Tanks might be constructed at no great expense, and water for flushing could be stored in the rains. A urinal is attached to each barrack-room, kept in good order, properly emptied and flushed, either by fresh skins of water, or by the bath refuse water, where available.

The furniture is of the ordinary type, and is capable of improvement in all Indian barracks, as is the means of lighting the rooms at night. At Landour the rooms are supplied with coarse iron lamps, badly fed and worse trimmed. Most of the fire-places are good, though wasteful of fuel; wood is supplied in sufficient abundance.

The scale of rations does not differ from that in use in all other parts of the Presidency. I think the daily ration is an excellent one, and sufficiently varied. The meat is usually of good quality; mutton is served out four, and beef three times a-week. The bread is occasionally inferior. The supply of vegetables on the whole is good. The bazaars furnish considerable variety the greater part of the year, and potatoes of excellent quality are grown in abundance close by. The small patches of garden which the soldiers cultivate afford them many a dish of green food also, and would be much more productive, but for the scarcity of water for irrigation in spring. Soldiers' or public gardens would be of great benefit undoubtedly, but are perhaps less practicable here than at most stations: 1st. For want of water at the proper season in sufficiency. 2ndly. Most of the men are in infirm health, and not much cut out for horticultural pursuits. Moreover, most of them are only on the hill for one season, and they would not reap the fruit of their own labour.

The canteen is situated near the upper barracks, and contains a room for the soldiers, and one for the non-commissioned officers. Rum is issued to such men only as are permitted by the surgeon to draw it, consequently the consumption is small. English ale and porter in casks are carried up from the plains for the use of convalescents at a very great expense. It is of the same quality as that supplied to regiments in the plains. It is usually sound and is always surveyed by a committee previous to issue, but it is generally flat and unpalateable, and I wonder much why Government should be at the risk and expense of the carriage of these hogsheads to Landour, when infinitely better malt-liquor is brewed at Mussourie by MacKinnon and Co., *four miles off.* This brewery has been established many years. They import hops from England, and turn out excellent ale and porter at about eight shillings a dozen, which keeps all the year round in the hills, and is good in the plains at least during the cold weather, for I have drank it at Kurrachee in February.

The means for recreation and amusement at Landour are as follows:—A fine ball alley, several skittle grounds, quoits, a theatre (not much used), and a very good garrison library, well supplied with books and newspapers, though space is much required for a reading-room. The men are encouraged to be as much in the open air as possible, under certain restrictions as regards exposure. Many of them collect butterflies, insects, &c., for sale, or go out shooting, and I have known of no ill-effects from the indulgence. Some of them work at their trades as shoemakers, joiners, farriers, &c., although there are no regular workshops, and a few are permitted to take situations as clerks to shopkeepers, assistants in the public schools, &c. Seeds and plants are provided gratis for such of them as chose to work at patches of gardens, and implements out of the canteen fund.

There is no speciality as regards the clothing required for the climate. In the rainy, the dry, and the winter seasons, obvious modifications are enjoined, and the flannel shirt, as a portion of the kit is recommended, as being nowhere more requisite than at this and all other hill Stations.

In summer the light serge tunic, or the *khakee,* or drab-colour drill suit, is all that is wanted, with a sufficient protection to the head. In the rains or cold weather the ordinary costume worn in England.

The sick usually arrive for the season, in two or three detachments, about the middle of March from the neighbouring Stations below, which are chiefly Gwalior and Jhansi, Agra, Meerut, Delhi, Futteghur, and Roorkee. In former years, before the establishment of other hill depôts, the Punjaub, even Peshawur, furnished a large portion of the invalids, who had thus many hundred miles to traverse, and occupied a couple of months or more on the road. Many a case dropped off by the way, and more arrived in the last stage of disease aggravated by the long journey.

The season closes on the 1st December, on which date such of the men as have recovered, or are not likely to profit by farther residence on the hills, go down to rejoin their regiments. Previous to this the men invalided to England have taken their departure, and a certain number of them whose cases, it is believed, require a winter in the climate, and perhaps a second season, remain behind. This class averages thirty-five in number. The Commanding Officer, the Adjutant, and the Surgeon have biennial appointments. Doing duty officers are appointed for the season only, one or two of whom may be detained for duty during the cold season. I think that a proper proportion of *active* and *healthy* non-commissioned officers should invariably accompany the men sent up for treatment, to maintain discipline. The Serjeant-Major and Quartermaster Serjeant have permanent appointments, while the Hospital Serjeant has to be selected hap-hazard each season from among the invalids, a most objectionable regulation.

The duty at Landour is nominal. Every man at the depôt is considered *an out-patient,* and strictly under medical treatment. There is a Commanding Officer's parade, for inspection, about twice a-week, and a march round the hill (about two miles) every morning, weather permitting, for such of the men as are fit for it; all the others attend hospital daily. There are no fatigue duties. A corporal's guard mounts at the prison, and the most efficient men are told off as orderlies when cases in hospital require their services. All the other duties at the station devolve on a detachment of the Goorkah Regiment quartered at Deyrah.

The hospital is situated on the easternmost spur of the range. It is distant about half a mile from the nearest, and a mile from the lower barracks. The site is free and open, and, in my opinion, the best available on the hill, although it has been objected to as being too much exposed in winter. It faces the north-east, and is protected on that side by a 10-foot flagged verandah, furnished with chicks or screens, as protection from dust and glare. It is a more recent erection than the barracks, the old hospital having been burnt down about fifteen years ago. The wards are five, viz., two 66 by 18 feet, one 24 by 18, and two small wards 28 by 8 feet each, and their height 17 feet. These will accommodate about seventy patients *well,* and there are two small closets situated behind the main ones for select cases, or for orderlies. There are besides, under the same roof, a good surgery, a waiting-room, and a steward's store, and at the extreme end a dead-house. The serjeants' quarters are detached, as are also those for the medical subordinates.

The roof is terraced, of some waterproof composition, and has a slight incline to carry off the rain. The flooring is of pine. Ventilation is maintained by opposite doors and windows, and specially by openings in the side walls, under the eaves, and is sufficient at all times. The wards are warmed by spacious fire-places, and the supply of fuel (wood) is ample, and they are well lighted. The windows open inwards, and have Venetians opening outwards. The doors are furnished in winter with *purdahs*, or thick quilted roll-up curtains. The furniture is very good. The cots are chiefly cane-bottomed, and each patient has a small two-shelved table. There are abundance of easy chairs and benches with backs, in the verandah. There is a good ablution room abutting the south side of the building, recently completed. It is furnished with metal basins in a row, fed by pipes from a tank placed above. There is a plunge bath and other conveniences besides, and hot water can be obtained at a few minutes' notice. The latrine is situated at the west extremity of the hospital, with which it is connected by a covered passage, and is properly ventilated. The soil is received into shallow earthen pans, on which grass is laid daily. These are emptied morning and evening into hand-barrows, which are carried away by sweepers to a sufficient distance below the hospital, and the contents buried and earthed over. Quicklime is plentifully supplied for deodorizing, and charcoal is hung in nets in the latrine and its passage. I do not think a better system could be adopted. There is a urinal adjoining the bath-room, which is flushed by hand and the waste bath water, and covered tubs receive the escape, and are emptied and cleaned twice daily.

The cook-house is a little way below the hospital; it is on the ordinary

Indian plan, which is well enough adapted for native cooks (who always *squat* instead of *stand* when at work); it is well provided with cooking appliances. Small luxuries for the sick are always attainable, including a cup of tea for each patient soon after daybreak, a refreshment I have always found to be highly appreciated by them. The hospital servants form a colony in small huts at a proper distance from their work. Some of them have been from twenty to thirty years at the establishment, and as a whole I have never met with better attendants on the sick at home or abroad.

The articles of diet for the use of the sick are in general excellent, and the allowance of extras extremely liberal. The hospital clothing the same as on the plains, with additional bedding when necessary.

There is no special accommodation for sick women and children, a serious want, which necessitates these patients being treated in barracks, or taking up some of the space intended for male patients. I believe, after very strong representations, that a woman's ward is to be added.

At the commencement of the season the wards are usually full; that is, one-third of the strength of the depôt are under treatment as in-patients, or about 70 out of 220, the general complement of invalids for the season. By degrees the number is reduced, as the cases improve, and are discharged as out-patients, and 50 is about the average sick list during the summer months. It rises a little again during the rains, chiefly by re-admissions for slight diarrhœa and intermittent fever. Throughout the winter there are seldom above half-a-dozen under treatment, and sometimes in very inclement weather it has been considered advisable to remove the patients to a temporary hospital formed in one of the lower barracks, as being more sheltered.

The sick are (when requiring carriage) brought to hospital in a *jaunpaun,* a kind of chair carried by four natives, and those requiring a change are conveyed round the hill by the same means every morning and evening, an extra set of hill-porters being sanctioned during the season.

In 1860 I submitted to the military authorities a recommendation to purchase an estate at Jerrapanee, midway between Landour and the foot of the hills, for the purpose of establishing a supplementary hospital, for the reception of cases deemed appropriate for treatment at a lower altitude than the sanitarium. The site is an admirable one—the elevation about 5,000 feet. It is just off the road leading up from Rajpore, and consists of a large, beautifully wooded hill, standing by itself, with excellent building space and natural drainage, abundant water-supply and shade. There is a very good house, with outhouses on the estate, and the price put upon the whole place is very moderate. I was given to understand that Government was inclined to a favourable opinion of the scheme.

At Budraj, a fine open hill about six miles beyond Mussoorie (with which it is connected by a good road), there is an excellent site also for building barracks sufficient for a regiment, and there are other very good situations in the neighbourhood.

Sick natives obtain gratuitous medicine and advice at Mussoorie, where a dispensary, partly supported by Government, has been some years established. Camp followers and officers' servants obtain the same from the Landour hospital.

The hill people are a hardy race, of middle stature, and well knit. They are much employed as porters and in other capacities by the English residents, and are faithful, honest, and not lazier than other natives. They will not take service out of the hills. The chief diseases in the neighbouring districts are low fever occasionally epidemic or even endemic in the valleys; small-pox, which is at times a great scourge, in spite of *almost* compulsory vaccination; diarrhœa in a slight form in the rainy season. Goitre is very common also, and attributed by these people to drinking snow water, and they have an universal belief in its being hereditary. *Mahmurree* or "*death sickness,*" rages at times like the plague (which I believe it closely resembles) in the neighbouring districts of Kemaon and Gurwhal; but I have not heard of its having ever prevailed within many marches of Landour. The native villages have no sanitary arrangements, and the people themselves are dirty in their habits and their persons. Venereal is very rare.

The selection of proper cases for treatment at the various hill sanitaria is a very important matter. Early in February medical boards assemble at all the stations below, to examine the cases brought forward by regimental surgeons, who are strictly interdicted by General Orders from sending improper cases. Nevertheless it has been a constant and a just cause of complaint by the surgeons at Landour that the selection of patients sent for treatment is in too many instances very injudicious. Nothing is more common than the arrival of hopeless cases of hepatic disease, advanced tropical dysentery, with disorganized intestine, enormous spleen with general dropsy, organic heart disease or aneurism, inveterate stricture, and secondary syphilis in its worst form. These cases arrive *but to die.* They absorb a considerable portion of the limited barrack and hospital accommodation, and they bring discredit on the sanitary influence of the climate. From what I have noticed, I think *too much* is expected of the resuscitating powers of the hill climate, and from this, or that regimental surgeons are anxious to get rid of tedious cases from their wards, the privilege of sending men to the hills is abused.

It has been well remarked that it is the *stage* of the disease fully as much as its *nature* that ought to be taken into account in electing for these hill depôts, and it is cruel to the patients to move them in advanced stages of disease. I believe, if none but proper cases were sent, the advantage of these institutions would be doubled every year. Landour in itself is most salubrious. The station is above malarious influence (sportsmen, &c., it is true, get bad jungle fever in the heated valleys among these hills, and are brought in to the station hopelessly ill sometimes), and it enjoys a perfect immunity from that form of diarrhœa so prevalent at Kussowlie, Simla, and other sanitaria, and which is characterized by symptoms and signs not easily forgotten by any one who has had experience in the disease. Officers and their families who were well housed at Kussowlie did not escape altogether, so the prevalence of this obstinate disease among the men cannot entirely be set down to deficient accommodation in barracks, although the condition of these barracks (which did not give 400 cubic feet per man, and where their height to the ceiling was only 11 feet, without special means of ventilation), must have had powerful morbific influence.

Permanent residents in these hills seem as healthy as the same class in England, and, from considerable experience of the climate, I would insure a man's life *at a lower premium* at Landour than in most parts of the United Kingdom. The very healthy appearance of the children has often been noticed. During two tenures of office as surgeon of the Landour Depôt, viz., 1851-2 and 1860-1, I had medical charge of two large public schools, one for about 100 boys, the other for about 50 girls. During these four years there was not one death among the pupils, and except an epidemic of hooping cough in the one and of measles in the other, there was really no sickness worth noting.

Political reasons, I believe, are against the plan of stationing any very large proportion of our troops in the hills. They must be at hand, near the large cities, *in terrorem;* but I think every argument is in favour of having all the weakly men of these regiments, besides those *actually diseased*, sent periodically out of the plains. A season at such a place as Landour for a young soldier when he begins to droop, or feel very seedy, might, and most probably would, save his life, and the country, the expense of his voyage home as an invalid, &c.

Men suffering from the effects of recent and severe tropical disease (if it has not terminated in organic lesion, and if the patient be naturally pretty robust) are almost sure rapidly to convalesce at Landour.*

There is a valuable sulphuretted hydrogen spring within a few miles of Landour; a fresh supply of the water used to be brought to the hospital daily, and I have found its use invaluable in a variety of diseases, particularly in disordered liver, dyspepsia, and in certain skin diseases. There is a chalybeate spring also in the neighbourhood, from the use of which I have seen excellent effects in divers cases.

Men of bad character are by General Orders on the subject prohibited being sent to Landour, but I fear the spirit of the order is too often evaded, and patients bearing a very indifferent character are very frequently forwarded, who continue to tamper with their health when out of hospital, although really the facilities for getting drunk are far less at the hill Stations than elsewhere, which is a good thing, as from the want of an efficient staff of healthy and active non-commissioned officers, discipline is apt to grow slack; and I may add that if more care were taken of the patients on the way from their regiments to join the sanitarium, by preventing them from straying into bazaars and grog-shops on the line of march, we would have fewer fatal cases to record immediately after the arrival of the drafts at the commencement of the season. A large detachment seldom arrives without furnishing one or more admissions by delirium tremens, or other maladies the direct effects of intemperance. The extension of the railway to the foot of the hills would much mitigate this great evil, and would farther incalculably enhance the value of the sanitarium by allowing of the sick in regimental hospitals being forwarded to the hills at all times during the unhealthy months, instead of their being despatched, as now, but once a-year.

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* The remarks made by Surgeon-Major Stewart as to diseases suitable for treatment at Landour have been omitted, as this question is considered with reference to the hill sanitaria generally in the concluding observations on these localities.

ABSTRACT OF MEDICO-TOPOGRAPHICAL REPORT OF MURREE, PUNJAB.

By Assistant-Surgeon J. Reade, 2nd Battalion Rifle Brigade.

The Murree Sanitarium and Convalescent Barracks occupy the summit of a high hill of the same name, which is one of the many spurs originating from the Kashmir range, and extending southwards towards the plains.

The Murree Hill commences as a somewhat detached ridge at the River Jhelum, where that stream forms the boundary between the districts of Hazara and Murree on the one hand, and the Kashmir territory on the other, and extends southwards for about 18 miles, rising in altitude all the way, and then curves to the westward with gradually diminished elevation, terminating after a course of 20 miles, or 38 from its commencement, in low ridges on the plain north of Rawul Pindee, and about 10 miles from that cantonment. Towards its centre, where the Murree Hill reaches its greatest elevation, viz., about 7,800 feet above the sea, is situated the Station and its Convalescent Depôt, which together extend over a surface of more than four miles in length. Immediately to the north of this site, the Murre Hill gives off a considerable branch, which runs nearly parallel with it for about 10 miles, when it is lost in a confused mass of intersecting hills, the offshoots from adjoining spurs on the east, this branch and the rest of the main ridge north of the Station towards its commencement at the river Jhelum possess the same peculiarities of soil and climate which have acquired for the Murree Sanitarium so great a reputation for salubrity, and are admirably adapted as sites for new Sanitaria or Military Hill Stations; they are, moreover, easy of access, as moderately good roads pass over each hill, and are continuous with the Rawul Pindee and Murree road.

On either side of the Murree Hill is a small mountain stream flowing along its base, that on the west the largest, is named the Hurru, and ultimately joins the Indus, and that on the east called the Sohan, after receiving many other like mountain torrents in the hills, and the Leh stream in the Rawul Pindee district, eventually joins the river Jhelum.

The water supply on the hill top is not so plentiful as could be desired; springs are numerous in all parts of the hill, but from want of care and protection from the sun during the summer months, most of them become exhausted, and some inconvenience has been felt from the restricted supply of water. For the future, however, this, it is anticipated, will be obviated. The attention of the authorities has been drawn to the subject, and no time has been lost in constructing tanks and reservoirs in various parts of the Station, and an ample supply of good water, it is expected, will result. The water is generally good, though to some slight extent impregnated with lime; that which flows over much of the surface is defiled by various impurities, principally decomposed vegetable matter, on which account boiling and filtering has been generally practised by those using it.

The hill consists of calcareous sandstone, which here and there crops out from beneath a superimposed bed of indurated red clay; the detritus of this last gives its character to the soil. At the lower part of the hill, however, there is a greater portion of sand in the soil, and at the higher elevations a rich black mould of decomposed vegetable organic matter forms the superficial layer of earth. Towards the west, all the hills consist of limestone, but all those to the east, as far as the river Jhelum, consist, like the Murree Hill, of sandstone covered by red clay.

Two or three different kinds of pines, oaks, the sycamore, horse-chesnut, hawthorn, wild pear, and a few others form the chief forest trees on this hill, and are mostly to be found on its northern aspect, a peculiarity which marks the other hill ranges in this locality. The brushwood is mainly composed of the wild indigo, and other species of the order Leguminosæ, the dwarf zizyphus, clematis, rose, &c., also violets, bluebells, and other English plants.

The tiger, leopard, hyena, and other carnivora, are denizens of the forests of the neighbouring hills. In the higher elevations are found the bear and barking deer. Birds in vast variety abound in these forests, which are also ranged over by troops of monkeys; the eagle, many kinds of the hawk, the pheasant, partridge, &c., are those of most note.

The four seasons of the year are well defined. Spring commences about the beginning of April, and the weather is pleasant, though at times storms and rain prevail. Summer sets in about the middle of May, and about the end of June the rains come on, which continue till the end of August or beginning of September. The summer is considered hot when the thermometer rises above 85° in the shade. The average fall of rain during the summer months is about 30, and during the whole year about 50 inches. The autumn from the 15th or 20th September to the end of November is the most healthy and pleasant season of the year; in it fine temperate weather, free from rain and clouds, prevails. Winter sets in about the end of December or beginning of January with snow, which usually lays on the ground to the depth of two or three feet for a couple of months. This season is not so severe as an English winter, and except during the prevalence of north winds, the air is mild and bracing. Towards the end of this season or the commencement of spring, rain, sleet, and storms prevail.

The Sanitarium during the summer months is a favourite resort of visitors from the neighbouring stations in the plains. The private dwelling houses are about 100 in number, scattered principally over the northern and western parts of the hill; most of them are badly built, run up in a great hurry, the wood unseasoned, and will not last more than seven or eight years. There is, however, a great demand for them, and house-rent consequently is enormously high.

The native population of Murree is upwards of 12,000, and during the summer season there are about 900 Europeans in the Station, including the Depôt, which generally averages 350 men. A well-built church has been in existence since 1859, and during the past year a small Presbyterian one has been built.

A good road runs through the Station, from which numerous others branch off to the barracks and different dwelling houses.

The Sir Henry Lawrence Memorial Asylum, capable of holding 140 children, has been completed; it is built on a pretty level spot in the south-eastern part, but on a lower site than the Station itself. The invalids are sent up in April, remaining during the summer months. The greater number rejoin their regiments in October or November, while others (generally between 40 or 50) remain at the Station during the winter.

The barracks, built on the highest ridge of the hill, are nine in number, their construction and capability of accommodation varying considerably; they appear well built, and have good enclosed verandahs. There are also new and very comfortable quarters for the married soldier at a short distance from the barracks.

The Depôt Hospital, capable of containing 40 patients, is situated on the summit of a cliff, and isolated from the men's barracks. A terrace 20 feet broad runs along the whole of the eastern side; it is well built, the wards are spacious and lofty, the amount of air for each patient being over 1,400 cubic feet; the ventilation of both barracks and hospital (except under the flooring, which is at present being attended to) is good.

The bazaar is unfortunately situated not far from the barracks, so that considerable facilities for obtaining liquors, &c., are enjoyed by the soldiers. This is a recognised evil, but from the circumstances of limited space and the arrangement of the Station, it has been heretofore found impossible to remove the bazaar to a more distant yet convenient locality.

Few diseases are indigenous to the climate of Murree, almost all that are met with are imported from the plains. Owing to the moderate rains that visit this hill Station, that peculiar form of diarrhœa, termed *par excellence* "Hill Diarrhœa," is but little prevalent. At the commencement of the rains, fevers, both intermittent and continued, prevail among the natives, but do not generally attack Europeans. At this season also inflammatory affections of the throat are rife, and attack both European and native. Skin diseases—various forms of porrigo and scabies—are very general among the natives, and owe their origin and aggravated characters to their very dirty habits.

INTERNAL Measurement of the Barracks and Hospital at the Murree Convalescent Depot.*

BARRACKS.

No. of Barrack.	Number of Rooms in each Barrack.	Size of each Room.			Cubic Contents.	Number of Men each Room is intended to accommodate.	Cubic Space per Man.	Superficial Space per Man.	Total Number of Men accommodated in each Barrack.
		L.	B.	H.					
1	2	30	21	21	13,230	12	1,102½	52½	24
2	2	26	21	21	11,466	8	1,433¼	68½	16
3	2	26	21	21	11,466	8	1,433¼	68½	16
4	3	26	20	21	10,920	8	1,365	65	24
5 Upper Storey	4	30	18½	18	9,990	10	999	55½	80
Lower Storey	4	30	18½	17	9,435	10	943½	55½	
7	2	30	21	21	13,230	12	1,102½	52½	24
8	3	25	18	20	9 000	8	1,125	56¼	24
9	2	45	25	20	22 500	16	1,406¼	70$\frac{5}{16}$	32
10	2	45	25	20	22,500	16	1,406¼	70$\frac{5}{16}$	32

REMARKS.—Besides the rooms already mentioned, each barrack has two small rooms, usually occupied by non-commissioned officers. No. 5 Barrack has four of these rooms. So that the whole barracks are capable of accommodating 292 men, exclusive of the inclosed verandahs and married quarters (for 24 families) which are generally occupied during the summer months. All the barracks have good bathrooms.

HOSPITAL.

Wards. No.	Size.			Cubic Contents.	Number intended to accommodate.	Cubic Space for each.	Superficial Space for each.
	L.	B.	H.				
1	28	20	21	11,760	8	1,470	70
2	52	20	21	21,840	16	1,365	65
3	28	20	21	11,760	8	1,470	70
4	15	20	21	6,300	4	Dispensary	
5	15	20	21	6,300	4	1,575	75
6	20	10	14	2,800	4	700	50

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* Married quarters not included in this Table.

REMARKS.—One of the small wards is used as a dispensary.

Nos. 5 and 6 Wards are intended for female patients. The medium height is given as regards No. 6, as it has a sloping roof, and, though originally intended to contain four patients, never more than two have occupied it at one time.

The bath-rooms, privies, &c., belonging to the Hospital are in good order.

THE CURATIVE VALUE OF THE FOREGOING CONVALESCENT STATIONS.

STATISTICS, heretofore, have not been conclusive in estimating the value of hill sanitaria in India. They have been defective, inasmuch as it is universally observed by Medical Officers that men labouring under diseases unsuited for treatment there have annually been sent from the plains; such as men who could not reasonably be expected to recover under the influence of any climate, and those suffering from organic disease of such a nature as to preclude a reasonable hope that a residence at a hill-station would be likely to effect such a change in their disease and constitutions as would render them fit for service again in the plains of India. At all events, that the residence in the hills must have been prolonged to such an extent as to practically exclude the test of a hill-sanitarium according to the present system of these institutions; in which case, the subjects either return to their regiments in the plains but partially restored to health, or are invalided to England. Even periodic fever, where a great anœmic condition is associated with a seriously involved spleen, is a constitutional and structural complication that is slow of recovery under the influence of the most suitable climate and other appropriate advantages, and would usually require either a long sojourn in the hills, or removal from India for recovery. There are other classes of disease which are not found, as a rule, to do well in the hills, which, when selected in great numbers to the exclusion of those more suitable, militate against the utility of these sanitaria.

It is obvious that statistics of recoveries, deaths, and invaliding, compiled under such circumstances, cannot be relied on as elucidating the question of the sanitary effect of hill-climates on the invalid European.

There is no doubt the opinion that these climates are much more powerful in prevention than in the cure of disease is well-founded; but, on the other hand, the reputation adverse to the recovery of invalids at the hills is in a large degree attributable to sufferers from very serious diseases being so often sent there. Numbers of deaths at these sanitaria are included under the head of consumption and bronchitis, the latter usually of a chronic character where tubercles had become developed, and the nomenclature had remained unaltered. Dysentery likewise involves a number of the fatal cases. In the very great majority of the recorded instances, the men had been the subjects of this disease in the plains for considerable periods, and, in the event of extensive ulceration of the bowels, such cases are most unsatisfactory as regards treatment. When associated with organic disease of the liver, they are still more so; and in no climate could a large proportion of them recover. Extensive hepatic disease, where abcess is suspected, is open to similar remark.

Medical Officers are induced, from various reasons, often to afford a change to the hills to serious cases. The occasional recovery from severe and chronic disease there, or the benefit probably still oftener derived, acts as an incentive; and, as invalids go to the hills towards the close of the cold season, unless sent there, they have but little likelihood of the remedial effect of change of air, and must usually be left to battle for life through a hot season in the plains, which, to a man greatly debilitated by climate and disease, is an ordeal which affords too often but a gloomy prospect.*

But, admitting the force of these reasons as applicable where a fair presumption can be drawn that the residence in the hills may either produce actual benefit to the health, or afford the invalid a better chance of passing through the hot season, until the usual period of invaliding to England. In other cases often little or no expectation can be held of improvement by a change to the hill sanitaria, and to some they are positively inimical; under which conditions removal there is opposed to the intention of their establishment. Besides which the room would be most likely required for men who would, in all probability, derive great benefit from the change. Numbers of men of every regiment that has served a few years in the plains of India are pale and anæmic who have no actual disease, but who have suffered from some morbid state, or present this appearance as the result solely of climate. These men are in a state of health that any epidemic visiting the station, or even the ordinary diseases incidental to the vicissitudes of the hot season in the plains are prone to attack, to such men removal to the hills for a hot season, or a longer period, if practicable, is usually of material advantage, enabling them to regain strength and vigour, in no degree probable of attainment unless such removal were afforded them.

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* Railway communication with the seaports may alter these conditions hereafter.

It may be collected from the reports of Medical Officers, that different years have afforded somewhat different results in practice as to the recovery, or benefit derived by invalids from their sojourn in the hills. This would seem to depend, as far as can be ascertained, on diversity in the atmospheric states of the seasons. The hot seasons, less marked by variations in temperature, and in which the rainfall was moderate or of a minimum degree, being more favourable to the recovery of certain classes of disease than during years where a maximum rainfall and sudden and frequent variations in temperature occurred. As the occurrence of these seasons can in no way be predicted, no provision by selection of cases is applicable, and the estimation adverse to recovery or improvement attaches to the climate as universal. This question has not been pursued very closely, and no table distinctly showing results is available.

Though the principle is recognised that certain diseases are not suited to hill sanitaria,—that they are not found, as a rule, to derive the benefit which is usually obtained by those more adapted to these localities,—the prominent question is, has experience afforded data upon which positive rules can be founded and instructions definitely given that certain diseases are never to be sent to the hill sanitaria. Such specification would simplify matters; but the fact is, though some classes of disease are known generally to do well in these localities, and are therefore recommended to be sent there, Medical Officers confine the diseases which they consider prohibitory to hill sanitaria, under all circumstances, to a very small limit indeed. Consumption and organic disease of the circulatory system not admitting of surgical operation, would doubtless be included in this category.

The subjects of cardiac disease are deemed unsuited to hill sanitaria, but this question seems open to explanation. Numbers of cases of functional disease of the heart are encountered in India, presenting anæmic bruit, and irregular action of heart, &c. There seems a difficulty sometimes in the diagnosis, and not infrequently it would appear such cases are sent to the hills as suffering from organic disease. It is found that this functional condition, symptomatic of deranged health from residence in the plains, is much benefited by removal to the climate of the hills, and it occurs usually that the subjects of this disease lose the abnormal bruit, the rythm of the sounds and evenness of the heart's action become restored, and, as the general health improves, these men become efficient soldiers. When, however, the physical signs of cardiac disease are the result of organic structural change, such cases, as can be easily understood from the elevation of the localities and associated atmospheric states, are by no means benefited by the removal, but are on the contrary aggravated. Wherefore the conclusion is inculcated that the subjects of organic disease of the heart are under no circumstances to be selected for the hill sanitaria.

Men who have suffered from heat apoplexy or from *coup de soleil*, are considered unpromising for an elevated locality; many of these, however, have done well when so placed; but the rule is adverse to the idea. It would appear that this is applicable in a great measure to the degree of gravity of the case. In those where the disease has been severe, or the result persistently troublesome, the climate has not been found generally beneficial and sometimes injurious; but in slight cases the bracing effects of hill climates has been experienced to extend to the local condition the advantage which has been derived by the general health. It seems, however, that as these head affections are contracted during the hot season, and as soldiers are invalided home from Bengal in the beginning of the cold weather, if a change is requisite for sufferers from the severe forms, removal to England should usually be afforded to them.

Rheumatism and neuralgia are not favourably situated, as a rule, in the hills. The debility, however, resulting from rheumatism, or the anæmic state often observable in those liable to sub-acute attacks of this disease, have been found to derive benefit, yet for such cases, when of long standing and severe, hill climates are contra-indicated; they are much more likely to derive advantage from a removal from India altogether.

Severe forms of secondary syphilis are not reputed to come under favourable circumstances of management in the hills, nor can the plains of Bengal be regarded as presenting a locality desirable for their alleviation. Though cases constantly do well in the plains, the tendency to debility so marked in severe forms of syphilis is found liable to increase in the relaxing climate there encountered during the hot season. Any system of satisfactory treatment should comprise the hygienic item of a climate calculated to favour a restoration to health. This, some Medical Officers conceive is more likely to be obtained in the hills than in the plains, as less relaxing in the hot weather than the latter; and it must not be forgotten that during the rains and hot season the variation of temperature is small in the hill stations usually, and especially so in some of them. Still opinions are in no instance very decided in favour of the measure of sending such cases to the hills, and oftener are given in dissent. It can be collected that cachectic anæmic men, who suffer from the hot weather, may occasionally be removed to the hills with advantage; but both during the rains and cold season they need much care. Nevertheless, though neither the hills nor the extreme heat of the plains are considered the best suited as a rule to these cases, their great prevalence is to be recollected, and the impracticability, and probable impolicy, of invaliding to England the great majority of sufferers. Moreover, many cases of secondary syphilis are unsatisfactory of management from states of constitution, or specific character of the disease, or other conditions, under the most judicious association of climate and treatment; and opposed to remedial measures, the element of intemperance usually indulged in when possible by soldiers, must bear its share of the odium in unsatisfactory results of treatment.

Certain of the stations in the Himalayas are said to be more prone to diarrhœa than others; the Simla group have especially held this reputation. The hill sanitaria of Darjeeling, Nynee Tal, and Landour, though exhibiting a proclivity to bowel complaint during some seasons, are described by Medical Officers as by no means constantly affording evidence of tendency to these affections, and may be deemed exempt from cholera as regards the European population. In 1858 cholera prevailed at Murree, and considerable mortality resulted, and in 1859 diarrhœa was very rife there; this was considered significant at the time: but since that period it does not appear that this sanitarium has been obnoxious to diarrhœa, nor has cholera presented itself.

Hill diarrhœa, when obstinate, is described as characterized by peculiarity of the dejections, indicative of vitiated secretion from the mucuous membrane of the bowels, associated not infrequently with derangement of the liver. The combination of damp and cool air upon constitutions relaxed by residence in the plains seems the cause prominently assigned for the production of this disease. Other influences, including impure water and imperfect local sanitation, are described as exciting causes, and doubtless exert influences more or less potent.

There can be no question but that at the high elevation of the sanitaria under notice, bowel affections in the rainy season are liable to occur, and moreover where extensive dysenteric disease exists in patients on their arrival in the hills, the locality is usually obnoxious to them, and that a removal to the sea-side or a voyage to Europe, to arrive at a mild season, would be much preferable, and should, when practicable, be afforded them; but towards the close of the cold weather, which is the period peculiarly applicable to consideration, neither of these latter courses can be extensively pursued under existing arrangements, at least from the distant portions of Bengal and the north-western provinces. Many Medical Officers inculcate that dysentery in all its phases is prohibitory to removal to the hills, while others observe that their experience derived from the treatment of invalids in hill Stations does not warrant such complete exclusion. Dr. Kidd, of the 27th Regiment, in his Report upon Darjeeling for 1862, observes—"Dysentery and diarrhœa, which have not made much inroad into the constitution, derive advantage here; but in cases where the debility is very great, whatever may be the cause, the change from the plains is very trying, and it would be advisable to have an intermediate sanitarium at a lower level for such cases." The late Dr. Pinkerton, of the Royal Artillery in his Report upon Nynee Tal, remarked—"Hepatic and dysenteric cases have this year rapidly improved, both before and after the rains."

The weight of opinion is decidedly against sending dysenteric cases to the hills where extensive ulceration of the bowels is suspected, or where the disease is associated with much hepatic complication or great debility.

Many Medical Officers strongly recommend sanitaria at a lower level than that of those under consideration for the treatment of dysentery. Mr. Reade, of the Rifle Brigade, in his Report concerning Murree for the year under review, observes that it is necessary in the rainy season to send these cases to a lower elevation. It is to be regretted that more attention has not been directed to this portion of the subject. If it is a received opinion, advanced by practical men, that bowel affections are better situated at a lower elevation during the rainy season, the principle ought to be fully explored. After the rains had passed, if thoroughly recovered, the men who had suffered from these affections could be subjected to the bracing climate of the sanitaria of greater elevation.

Hepatitis in its various stages affords discussion as to the advisability of sending men so afflicted for treatment to the hills. Many of the remarks relative to dysentery in connection with these localities are applicable to this affection. It occurs, however, that functional derangements of the liver are frequent in India, and not infrequently these states are difficult of separation in diagnosis from structural lesions of sub-acute and chronic forms. The general health suffers in both, and the similarity in some leading characters tends to this difficulty. The debility associated with, or subsequent to such functional derangements, is removed in the hills, and the various conditions not produced from organic structural change are found to yield readily to treatment there.

With reference to abscess of the liver so fatal under all circumstances, differences of opinion prevail, but probably the most that can be said in favour of removal from the plains to the hill sanitaria in such cases is, that at the close of the cold season, if abscess exists, and no prospect of removal from the country presents, provided the patient is not much debilitated, or the subject of dysentery, and that the journey to the hills would not be long or too fatiguing, he would be better placed there than in the plains during the ensuing hot season; it becomes a feature in the treatment to provide the least relaxing climate. Setting aside its engaging an organ so important, and the concomitant dangers attending its opening by natural or artificial means; as the period of acute hepatic inflammation would have gone by, the patient would stand somewhat in the position of suffering from a debilitating abscess. Invalids usually leave their regiments in the plains during the cold weather, and reach the hills in March, wherefore there is no great sudden transition of temperature, they have passed the cold season in the plains. This point is advanced by those who suggest the hills for the treatment of hepatitis; but the cool and damp air, at certain seasons, of the great elevations is generally disapproved of for the sufferers from acute or chronic hepatitis, if either attains to any serious degree it is not deemed prudent to submit such cases to these climates. Removal from India as soon as practicable, with the association of careful regimen, and abundant warm clothing is the most judicious course to pursue.

It is reported by Medical Officers that surgical cases do well in the hills, and it would seem advisable that in all such cases where a wasting local cause exists, removal there should be effected. This attaches also to injuries, such as fractures and certain forms of luxation, or other surgical states, where confinement to hospital would be necessary for a lengthened period during the approaching hot season.

Strumous ulcers, and the tendency to a strumous diathesis are considered to benefit by a residence in the hills; but where this habit of constitution is serious, or engages organs important to life, no improvement could be expected, and such cases should not be sent there.

It is admitted, however, on all hands, that the condition of invalids most benefited by these sanitaria is that where general health has been broken by the malaria and heat of the plains, either in those who have suffered from fever, with or without splenic complication, or who are in the state so commonly seen in India, where possibly no active form of disease has been appreciable, but anæmia, with its accompanying impaired energy and inability to undergo fatigue, with loss of appetite, &c., manifest that the climate has engendered a condition which renders the soldier unfit for his duties and obnoxious to disease. The air is pure and free from malaria, the climate is invigorating, the viscissitudes of temperature are subjected to no extremes, which, together with open-air occupations, tend to exhilirate the spirits and speedily to remove the abnormal result of heat and malaria contracted in the plains; and though it is not the European's climate, it approaches it, and in probably no indication is it more evidenced than in its effect upon children, who thrive wonderfully in some of these sanitaria, presenting the ruddy healthy look of the most favoured regions of Europe.

It is almost a matter of supererogation to here notice the question so often mooted by Medical Officers and others as to the advisability of utilizing the mountain ranges in India for the location of a large portion of the European Army stationed in that country. It does not, however, seem fit to conclude these remarks without alluding to the subject, though a very brief notice will suffice. It is fairly deducible that if the European soldier is placed in a locality where heat and malaria are hardly felt, a considerable step towards assimilating his position to that to which he has been accustomed in his own climate will be obtained. In the hills cholera and fever, two of the great scourges of India, would cease to dog his footsteps, and there is no proof that these localities generally would present influences inimical to Europeans reaching them in health. The character attached to the Simla group, as a residence for soldiers, is less decidedly favourable than had been anticipated, but this has received explanation upon grounds recognised, and conceived in a great measure remediable in future arrangements.

The experience that a long series of years has afforded of the healthiness of the hill Stations in the Bengal Presidency, from the residence there of civil and military servants of the State, has often been advanced.

A good selection of localities, well built and judiciously arranged barracks, clothing suited to the climate, strict and extensive sanitary arrangements in the various details, would doubtless render them well suited to preserve European soldiers robust and fit for service at all times. The numerous drafts of recruits from England and the extensive invaliding would be diminished, and thereby the strain upon the system of voluntary enlistment lessened.

When the political condition of the country permits it, and when the finances enable the large expenses attending the erection of new barracks to be incurred, this matter will obtain prominent notice.

The barracks necessarily built in the plains after the mutiny were in many instances temporary structures, and not altogether in accordance with the views of modern sanitary reformers. They could be replaced from time to time by barracks in the hills.

The opinion is held by many that by locating European regiments in the hills, wherever practicable, the men would be rendered so much the more happy and contented with their lot from the enjoyment of improved health and a genial climate for themselves and families that comparatively few of those who now take their discharge on the completion of their ten or twelve years service would do so. Practical men believe that the heat, monotony, loss of energy, and frequently impaired health, connected with a residence in the plain, induce many soldiers to forego the pecuniary and other benefits attached to service in India.

One phase of the question, in a political sense, is comprehensible to those who have resided any time in India. It is said, that were the great majority of the European soldiers kept continuously in the hills and brought down to the plains occasionally in the cold weather, and massed in large bodies for drill, that the effect would be more influential on the native mind than the association of limited numbers in numerous and scattered cantonments in the plains. No people are more imaginative than the natives of India, they are often more impressed by narratives and traditions of what is removed from their constant observation than by daily association. It is a question if the habits of British soldiers tend to raise the European character in the estimation of the natives. It is a fact, at least, that those natives who have been brought up in their intimacy as servants and traders have not gained much by their acquired civilisation. Railways will henceforth render distant places in India easier and more speedily accessible on emergencies than localities comparatively approximate a few years back.

GENERAL ORDERS ON SANITARY MATTERS

Issued during the year by His Excellency the Commander-in-Chief in India.

Head Quarters, Camp, Sumbrail, 20th December, 1861.

At several Stations officers are in the habit of purchasing daily, at the contract price, bread and meat from the Government contractors.

2. This custom has unfavourable results, because it embarasses the unceasing efforts of the Commander-in-Chief to eradicate the baneful practice of contractors supplying the trooops with inferior rations.

3. His Excellency has observed in his tours of inspection that contractors who tender inferior rations to the troops, which are rejected by the regimental authorities because they are inferior, do not, at the same time, fail to supply the officers of the Station with good rations.

4. This must arise from one of two causes: either the contractor, for the purpose of creating the belief that the rations are good, and equal to contract, ssues the best part of the rations to the officers of the Station, instead of distributing it amongst the men; or he furnishes, under the name of rations, officers with bread and meat which are superior to those supplied to the men.

The result is that in the very Stations where rations furnished by the contractor have been constantly rejected by the regimental authorities, and condemned by boards as not equal to contract, officers have expressed their surprise at the circumstance, because the meat and bread supplied to them by the same contractors have been invariably good.

The Commander-in-Chief therefore directs that, for the future, officers at Stations are not to purchase ration bread and meat from the contractors, except at Stations or in Camp where they cannot be otherwise obtained.

(Signed) H. W. Norman, Lieut. Colonel,
Officiating Adjutant-General of the Army.

By Order of His Excellency the Commander-in-Chief.
E. Haythorne, Colonel,
Adjutant-General, H.M. British Forces in India.

Head Quarters, Simla, 24th April, 1862.

3. The following Army General Order and Circulars are published for the information and guidance of officers commanding Her Majesty's regiments of Cavalry and Infantry and brigades and batteries of Royal Artillery :—

Head Quarters, Simla, 7th April, 1862.

1. Officers commanding Divisions, Stations, &c., will make themselves thoroughly acquainted with the ground in the neighbourhood of their stations to the extent of twenty miles, with a view to at once selecting sites for encampments in the event of cholera appearing, and care will be taken to ensure these places being always kept in a fit state for occupation by troops, and with a sufficient supply of wholesome water available on each.

2. The officers of the Quartermaster-General's Department of each Division will prepare a plan of the required extent of country, with the different encamping ground marked on it, so that when the disease approaches, measures may be at once taken to place the troops under canvas without delay.

3. On the outbreak of cholera in an epidemic form, either in neighbouring villages or cantonments, officers commanding stations will be prepared to move the troops into the selected camps on the shortest notice.

4. As soon as any case of cholera is reported in the Station, the troops will be moved into camp, and no unfavourable condition of the weather is to prevent this movement being carried out.

5. The force will be broken up into as many detachments as the number of the Medical Officers will admit, allowing one to each party. Should the Medical Staff be insufficient to afford such medical aid to the several detachments, experienced medical subordinates will be placed in charge of the smaller or less distant parties.

6. Officers commanding Stations are authorised to call directly for aid from other Stations, Divisions, or Districts free from cholera.

7. The sick labouring under other diseases than cholera, will move with the force and share the benefit of removal from the choleraic atmosphere.

8. It must be insisted on that all discharges from the stomach and bowels of cholera patients be instantly removed and buried in pits.

9. Strong deodorants are to be thrown into the receiving vessels, as well as into the pits, latrines, and privies.

10. Should cholera follow the troops, they will be moved short distances at right angles, if possible, to the prevalent wind and track of the disease, every second or third day, care being taken that the marches in no way fatigue the men.

11. The breaking out of cholera in a regiment or at a Station, is on no account to cause the suspension of the soldiers' daily amusement and occupations, care being taken that the latter in no way fatigue them ; and commanding officers will use their utmost exertions to develope any recreation or employment of which the effect is to keep the men's minds in their normal state.

12. It often occurs that soldiers, on a visitation of cholera, indulge in the use of spirituous liquors, in the belief that they are a preventive against the disease. The medical authorities unanimously condemn this supposed remedy as a certain promoter of the disease ; commanding officers are, therefore, enjoined to use their utmost endeavours to prevent so baneful a practice.

13. One of the several cholera antidotes is the early treatment of premonitory symptoms, of which looseness of the bowels is a principal one, commanding officers are, therefore, requested to give the most precise orders on the subject, and to cause all men affected by premonitory symptoms to be placed at once in a premonitory ward.

14. The troops are not to return to cantonments until all traces of the cholera shall have disappeared from the neighbourhood, either amongst the European or native population. The barracks and hospitals will be thoroughly fumigated, the walls whitewashed, and the doors and window-frames painted, before they are re-occupied.

15. The men will be supplied with hot tea and coffee before going out in the morning ; they will invariably wear flannel belts, and all precautions must be taken to prevent their remaining in wet or damp clothes.

16. The Commander-in-Chief feels persuaded that all officers share his feeling, that when cholera breaks out in a Station, they should be with their regiments and at their posts.

(Signed) E. B. Johnson, Lieutenant-Colonel,
Officiating Adjutant-General of the Army.

Circular, No. 1125.

Adjutant-General's Office,
Head Quarters, Simla, 15th April, 1862.

Sir,—With reference to G. O. C. C. of the 7th ultimo, I am desired to inform you that it is not intended by paragraph 4 of that Order, that an isolated instance in a Station of cholera amongst the troops should necessitate their removal into camp, unless the disease should have broken out in an epidemic form, either among the natives of the particular Station, or in neighbouring villages or cantonments, as specified in paragraph 3.

2. I am further instructed to request, that on the appearance of a case of cholera among the troops under your command, you will be good enough to report the same to me by telegraph, for the Commander-in-Chief's information.

I have, &c.,
(Signed) E. B. Johnson, Lieutenant-Colonel,
Officiating Adjutant-General of the Army.

No. 3474.
A.

Circular.

Adjutant-General's Office,
Head Quarters, Calcutta, 13th August, 1861.

Sir,—Great confusion being found to arise from the mode in which different officers in command have reported the progress and extent of the cholera now prevailing in the north-western provinces, in consequence of which no Department at head-quarters is in possession of complete information, I am directed to inform yon, that when violent disease makes its appearance at any Station, and during its continuance, the officer in command of that Station should report daily, by telegraph, to the Adjutant-General of the Army, for the Commander-in-Chief's information, giving the number of admissions to hospital and deaths in each corps at the Station.

2. No other telegraphic communications should be sent to head-quarters relative to the progress of the disease, unless a reference has to be made to the Quartermaster-General, relative to any movement of troops rendered necessary or desirable by the disease, which will of course be done by telegraph.

3. Detailed reports should be made to the proper Department, by post; but the Department of the Adjutant-General, Her Majesty's Forces, (where royal troops are concerned) and the Quartermaster-General of the Army, will be kept daily informed of the progress of the disease, as known by the telegraphic reports received in this office.

I have, &c.,
(Signed) H. W. Norman, Lieutenant-Colonel,
Deputy Adjutant-General of the Army.

By order of His Excellency the Commander-in-Chief,
E. Haythorne, Colonel,
Adjutant-General Her Majesty's British Forces in India.

Head Quarters, Simla, 13th May, 1862.

With the concurrence of Government, and while cholera prevails, the Commander-in-Chief is pleased to sanction the entertainment of natives to attend European soldiers in hospitals suffering from that disease to such extent as local medical authorities may consider necessary; the men being provided, on requisition, by the Commissariat Department.

Sanitary. Head Quarters, Simla, 23rd June, 1862.

In continuation of G. O. C. C. of the 7th April last, the Commander-in-Chief is pleased to publish the following rules, which have received the sanction of Government:—

1st. On the occasion of an outbreak of cholera, such changes in the diet, and such other medical comforts are to be allowed to the sick as the Deputy Inspector-General of the circle or other Principal Medical Officer may deem expedient.

2nd. Wood fires, if considered necessary, are to be maintained to the windward of camp.

3rd. The railway to be used for the conveyance of the troops through an infected tract.

4th. In wet weather cots are to be carried for all the men, to prevent their sleeping on damp ground.

5th. On the requisition of medical authorities, Commanding Officers are to indent on the nearest magazine for such additional camp equipage as may be considered necessary. The indents to be countersigned by the Deputy Inspector-General of the circle and the officer commanding the Station.

6th. The Deputy Inspector-General of Hospitals being the officer specially appointed by Government to judge of the extent to which the recommendations of Medical Officers should be complied with, the Commander-in-Chief desires that their opinion may, whenever practicable, be obtained. In the event of their absence from the Station, the opinion of the senior Medical Officer may be acted upon.

Signed) E. B. Johnson, Lieutenant-Colonel,
Officiating Adjutant-General of the Army.
By order,
E. Haythorne, Colonel,
Adjutant-General Her Majesty's British Forces in India.

Sanitary Encampment.

Head-Quarters, Camp Agra, November 14th, 1862.

With a view to preserving the conservancy of camps and encamping grounds, the Commander-in-Chief directs that the system should be adopted in camp as has been laid down in recent orders for all military cantonments, the main principle of which is the daily burial of all refuse matter.

1. It is therefore to be at once established as a Standing Order among all European troops moving in course of relief, or otherwise, that two trenches, each 2 feet deep, 2 feet wide, and 50 feet long, are to be dug by the regimental bildars at a distance of 120 yards from the flanks of each encamping ground, the inward flanks of such trenches to be 120 yards from the outward flanks of the camp, that is, in echellon; but should the nature of the ground prevent their location according to this rule, the same principle for their location is to be observed, that is, they are not on any account to be directly in front or rear of the camp, but in echellon on their flanks, being so placed that the prevailing wind is not to carry the effluvia to the camp. These trenches are never to be in such proximity to wells as to make percolation to the water possible.

2. The Quartermaster, or whoever is entrusted with the formation of the encampment, is to see that this arrangement is made daily at the advance ground before the arrival of the troops, and a flag or other mark should be placed to show the position of the trenches, one of which is to be allotted for the European soldiers, and the other for the native camp followers, &c., of a British regiment: the same principle is also to be strictly enforced for native regiments, cavalry or infantry, on the march; but as such corps have not a permanent establishment of sweepers and bildars, arrangements must be made

by officers commanding to allot a certain site or position in the vicinity (but not too close) of each encamping ground for the use of the native soldiery and camp followers, and the present practice of defiling the ground on all sides of the camp must be strictly prohibited.

3. These trenches are to be thoroughly filled in with earth by the regimental sweepers and bildars before the rear-guard quits the ground, and for those duties the regimental sweeper and bildar establishments should be properly divided between the advance and main camps, and the officer on duty with the rear-guard is to be required to report to the Commanding Officer that the trenches have been so filled in, and in the case of native troops, that the "sites" specially selected have been properly cleaned.

4. The Commanding Officer of every regiment or detachment on the march is required to place himself in direct communication with the tehsildar, or other responsible native functionary at each encamping ground, to arrange that effectual measures are adopted by the native local authorities for thoroughly sweeping and cleaning the whole area of each encamping ground immediately it is cleared of the camp, as well as the "sites" above referred to, and for burning or removing to a suitable distance all collections of stable litter or refuse of every kind, &c., so as to make the ground perfectly fit for re-occupation by any troops marching by the same route.

5. In the event of troops forming a standing camp for exercise or other duties, or halting more than the ordinary time at any camp ground, an additional deep trench should be dug at a distance of at least 200 yards from the camp and to leeward of it, on the same conditions as the first trenches, for the reception of filth twice every day, the regimental sweepers removing it from the camp trenches before mentioned, and depositing it in the deeper and distant trench, as they do from the latrines in cantonments, and covering over with earth each day's accumulation.

6. Inquiries are also to be made by the Quartermaster, or other responsible officer of the regiment, at each advance ground, from the same native functionaries, as to whether the well water has been recently drawn, and the well in a state fit for use for drinking and other purposes; if not, effectual arrangements must be made for rendering it so before the arrival of the troops on the encamping ground.

7. In the route journals furnished by regiments to the Quartermaster-General of the Army, a note is in future to be entered that these orders have been strictly carried out.

In issuing this General Order the Commander-in-Chief begs to return his sincere acknowledgments to Dr. Hathaway for the great assistance which he has derived in promoting the conservancy of the Army from that officer's able, practical, and successful exertions and suggestions on this most important matter, affecting as it does the health, efficiency, and comfort of the Army.

(Signed) E. B. Johnson, Lieut.-Colonel,
Officiating Adjutant-General of the Army.

By order, E. Haythorne, Colonel,
Adjutant-General, H. M. British Forces in India.

Soldiers' Gardens.

Head-Quarters, Camp Agra, 15th November, 1862.

In continuation of previous orders* and circulars,† and with a view to making generally known the liberal consideration of Government in the matter of soldiers' gardens, the cultivation of which, according to system and rules already promulgated, the Commander-in-Chief most strongly desires to promote, his Excellency Sir Hugh Rose now publishes, for the guidance of all officers commanding divisions, brigades, and Stations, and for the encouragement of all soldiers disposed to turn their leisure to such a good purpose, the following rules, which have been sanctioned by Government, regulating the annual distribution of prizes to the most industrious and successful cultivators of such gardens.

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* G. O. C. C., 10th December 1855.

† Circular from the Quartermaster-General of the Army to officers commanding Divisions, dated 16th January, 1857.

2. Committees as before ordered are to assemble at such time of the year as the local authorities may deem best, so as to allow of the several descriptions of gardens (flower or vegetable, cultivated entirely by the soldiers themselves, either in barrack or regimental gardens) being properly inspected, on the understanding, however, that prizes are not to be awarded to individuals, or collectively, more than once a-year.

3. Competition is to be strictly confined to the men of the same corps or detachment, and the following scale of prizes to be thus allotted is to be considered the maximum under all circumstances, viz.:

For general competition by each regiment of British cavalry or infantry, or division of artillery, equal in its composition to a brigade, one prize of twenty-five rupees, and one prize of twenty rupees. And for general competition by a wing of a regiment, or division of artillery equal to a demi-brigade, cantoned separately, one prize of twenty rupees. And for competition by each battery, or each troop and company of the above, one prize of fifteen rupees, one prize of ten rupees, and one prize of five rupees.

4. It is to be discretionary with Committees to award these prizes in full, or in part, according as they may consider the exertions of the men to deserve; and in the event of any battery, troop, or company having been unusually industrious, and another the reverse, they may transfer the prizes from those who have not been industrious to those who have.

5. Regimental non-commissioned staff are not eligible to compete for these prizes, unless it can be certified that their garden produce has been *bona fide* the result of their own labour; in this case they can compete for the general prizes detailed in paragraph 3.

6. In order that the prizes may be paid on the spot to the successful competitors, sums equal to the aggregate amount of these several prizes are to be obtained by the Presidents of the Committees at the prescribed period, under a station order, from the Executive Commissariat Officer of the station, and in the event of the Committee not awarding the whole sum, the balance is to be repaid to the Commissariat Officer.

7. As soon as practicable, after the proceedings of the Committees have terminated, a contingent bill in detail on the Commissariat Department should be forwarded by the president to the Deputy Assistant Quartermaster-General of the division or district for the amount actually presented as prizes, and, after having been countersigned by the officer commanding the division or district, the bill should be returned for delivery to the Commissariat Officer who had advanced the money, and thus enable him to settle his accounts.

8. The Commander-in-Chief observed at his inspections that soldiers do not like or frequent gardens at a distance from their barracks, however good or well cultivated they may be; and that, on the other hand, they prefer and cultivate gardens close to their barracks, because they can go to them in undress and without trouble to themselves, watering them also with the means at their disposal from ablution rooms.

9. The Commander-in-Chief requests Commanding Officers to bear in mind the orders his Excellency has previously issued on this subject, and to do their utmost to encourage their soldiers to make and cultivate the gardens close to their barracks. His Excellency also wishes that the distribution of prizes should be considered as a fête for the regiment, and be a holiday for the men at large, the band playing, and the regimental school children attending, while the distribution takes place, and Sir Hugh Rose will feel obliged if all officers would make a point of attending the distribution.

10. All correspondence on the subject of soldiers' gardens is to be made through the officers of the Quartermaster-General's Department to divisions or army head-quarters.

(Signed) E. B. Johnson, Lieut.-Colonel,
Officiating Adjutant-General of the Army.
By order, E. Haythorne, Colonel,
Adjutant-General, H. M. British Forces in India.

Head Quarters, Camp Jhansie, 18th December, 1862.

In view to providing European troops with good drinking water, Government has been pleased to sanction the issue of filters, constructed of Ghurras, partially filled with sand and charcoal, resting on wooden or bamboo stands, to the extent of four per company or troop barrack, and for barracks for married men in proportion.

2. The stands are to be constructed of bamboo, or wood, at as little expense as possible, the maximum sum allowed for each having been fixed by Government at 4 rupees 8 annas.

GENERAL ORDER.

It having been decided that blue serge trousers, instead of cloth, shall be in future supplied in alternate years with the red serge frock, to European troops serving in India, the Commander-in-Chief, under instructions from Government, is pleased to notify that the following shall be the scale of clothing for troops in this country, viz.:—

For the cold season, 1 cloth tunic and 1 pair of trousers every alternate year; for the wet and monsoon season, 1 red serge frock and 1 pair blue serge trousers every alternate year.

For the hot and dry season, 3 white twill frocks and 3 pairs white trousers, to be paid for and kept up by the men from their compensation-money.

REPORT ON HYGIENE FOR 1863.

By E. A. PARKES, M.D., F.R.S., Professor of Hygiene in the Army Medical School.

IN these notes on hygiene it is intended merely to bring to the notice of Army Surgeons any hygienic points published in the preceding year which appear to be likely to be of use to them. A complete report of hygiene is, of course, not aimed at, and merely a very short selection can be made from the observations of the year.

The following is the order of arrangement:

I. Enumeration of Military Works on Hygiene.
II. General Hygienic Conditions.
    Air and ventilation.
    Water.
    Food.
    Removal of excreta.
    Exercise.
    Spread of the specific diseases.
III. Soldiers.
    Size and weight of French soldiers.
    Military Hospitals.
    Distribution of sick and wounded in campaigns.
    The American War.

I. WORKS ON MILITARY HYGIENE.

The most important work is one published by Dr. Hammond, Surgeon-General of the United States Army.* It is a bulky volume of 41 chapters and 600 pages, and considering the immense labour which his position entails upon this eminent physician, it is wonderful that he should have projected, much more carried out, a work of such magnitude at such a time. Of course the various Bluebooks of the English Army, and especially the Army Sanitary Commissioners' Reports are much referred to and quoted, but there is also abundance of original observation. Various portions of it will be hereafter referred to.

A work has been published by Dr. Prager, of the Prussian Army,† giving a full account of the organization of the medical section of the Prussian Army and of all its duties. No less than 1,127 pages of very close print are occupied with the bare enumeration of duties, rules, and description of apparatus, and medicine. The last chapter contains the sanitary police rules, and occupies 32 pages; it is chiefly taken up with regulations respecting the outbreak of contagious diseases. The rules are simple and obvious, and are familiar to all of us.

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* "A Treatise on Hygiene." By William A. Hammond, M.D. Phil. 1863.

† "Das Preussische Militäir-Medicinal-Wesen." Von Dr. C. J. Prager. Berlin, 1864.

Another military medical work was published three years ago, to which reference may be made; it is a history of the Prussian Medical Service,[*] and gives a curious account of the sufferings of the soldier from the want of medical attendance 170 years ago, and of the gradual introduction of a skilled service by Fredrich Wilhelm I. and his successor.

In France two works have been published by M. Didiot. One is a Code for the Officers of the Medical Department of the Army,[†] and the other, by the same author, is a reprint of that portion of the Code which refers to the sanitary rules in force in the French Army.[‡]

In England the most important event in military medical literature has been the publication of the Report of the Indian Sanitary Commission, in two thick volumes; the first including the Report, evidence, analysis of evidence, abstract of Station Returns, and Meteorological Reports by Mr. Glaisher; the second containing the Station Returns more in detail. To attempt any analysis of this work would be impossible, and, indeed, unnecessary, as doubtless every Medical Officer will read it carefully. Like the celebrated Report of the Royal Sanitary Commission on the Army, it is in itself a most elaborate treatise on hygiene, and has besides this unique character that it is able to give much fuller details of the sanitary characters of the various Indian Stations than could possibly be attempted in any common book.

Two other Blue Books have been published, also of great importance and utility, viz., a Report on the Mediterranean Stations, by Captain Galton and Dr. Sutherland, and a Report on Cavalry Barracks, by the same writers. They are both practical hygienic works of great value, and should be studied by all army surgeons, especially by those now stationed in the Command. One point especially noted in the Mediterranean Reports is the state of health and the mortality of the civil population, a subject which army surgeons ought to carefully investigate. At present it is singular how few materials exist for a satisfactory examination of this point.

The first volume of a new serial has also been published, which is likely to be of great utility. It is called "Annals of Military and Naval Surgery, and Tropical Medicine and Hygiene for 1863,"[§] and is intended to be published yearly. Extracts of all papers of importance for the military and naval surgeon are given, and in a small portable volume everything of interest in English military writings which has occurred in 1863 is included. The work bears no name, but from the preface it would appear that it owes its existence to an officer at home on sick leave, and it is understood to be the work of Dr. Alexander Grant. It can be recommended as a most useful work.

Dr. Gordon's "China"[||] contains a most excellent description of Hong-kong, and of the chief points occupied or visited by the troops in the last expedition. A work has been published by a surgeon in the Prussian Navy, which also gives an extremely good account of Hong-kong and of the climate of North-East China.[¶]

AIR AND VENTILATION.

Little has been added to our knowledge of air and ventilation during the year. But a most interesting paper on a remarkable lung disease which prevailed in some of the ships of the Mediterranean squadron in 1861 has been published by Dr. Bryson.[**] In two ships, the "St. Jean d'Acre" and the "Cressy," and to a less extent in some of the other ships, a lung disease, which has been called epidemic pleuropneumonia, or epidemic phthisis, prevailed, and led in some cases to rapid breaking down of the lung. The causes appeared to be, and we may safely say were, found in the crowding of the men on the lower deck. In the "St. Jean d'Acre" only 14 inches space were allowed to each hammock, and so thoroughly was fresh air excluded that the temperature of the air above the hammocks was 8° or 10° hotter than the air below, and nausea was caused in any one going between decks from the open air. There was some evidence, or to use Dr. Bryson's own words, "there were good grounds for suspecting," that the disease was communicated from the sick to patients in the hospital at Malta.

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[*] "Geschichte des Medicinal-Wesens der Königlich. Preuss. Armee." Von Dr. A. L. Richter. Erlangen, 1860.

[†] "Code des Officiers de Santé de l'Armée de Terre." Par le Dr. A Didiot. Med. Prin. de 2nd Classe. Paris, 1863, pp. 992.

[‡] "Code Sanitaire du Soldat." Par A. Didiot. Paris, 1863, pp. 533.

[§] The price is 5*s*.

[||] "China from a Medical Point of View in 1860 and 1861," by C. A. Gordon, M.D., C.B., Deputy Inspector-General.

[¶] "Beiträge zur Kenntniss des Klimas und der Krankheiten Ost-Asiens." Von C. Friedel, M.D. Berlin, 1863.

[**] Read before the Epidemological Society, December, 1863.

The military surgeon will at once be reminded of the same condition in the West Indies 35 to 40 years ago, when Sir Alexander Tulloch informs us the men also slept in hammocks which touched each other, in barracks without ventilation, and when yearly, in that most equable of climates, a large number of deaths took place from phthisis. The same causes led precisely to the same results; and in the same way the ill-ventilated casemated barracks at Gibraltar and Malta have given rise almost in our own times to a most striking prevalence of destructive lung disease.

The fact that the epidemic lung disease of the "St. Jean d'Acre" and "Cressy" was communicable is another fact tending to the conclusion that (as in the case of pleuro-pneumonia of cattle) the pus and epithelium cells from the sputa must have passed into the air and been inhaled into the lungs of other persons in the hospital at Malta, and it is another argument in favour of the opinion, which, at one time entirely discredited, is now again gaining ground, that common phthisis is sometimes produced in the same way.

In his work on hygiene (p. 170) Dr. Hammond refers to an experiment made, in imitation of Gavarret, to show the poisonous effect of the organic matter thrown off in respiration. A mouse was confined in a large bell-jar, into which fresh air was allowed to pass freely. The carbonic acid formed was absorbed by baryta water and the watery vapour by chloride of calcium. There was, therefore, no deficiency of air and no excess of carbonic acid, yet the mouse died in 45 minutes. The air in the jar drawn through permanganate of potash showed evidence of a large amount of organic matter. The only doubtful point in this experiment is whether pure air was really supplied in sufficient quantity.

In the Federal Army the amount of cubic space in hospitals has been fixed at 1,200 feet, and the superficial space at 87 feet.

Dr. Herbert Barker* has made some experiments on the effect of sewer air on animals. By carrying a pipe down to a cesspool he obtained an abundant supply of fœtid air. The reaction of the gas was generally neutral, but sometimes alkaline from ammonia. The gases discovered were sulphuretted hydrogen, sulphide of ammonium, and carbonic acid. This gas was conducted into a chamber where an animal was confined, and means were taken to secure a circulation of the sewer air through the chamber. There was no exclusion of atmospheric air. Three dogs were all made very ill with vomiting and purging, loss of appetite, prostration, emaciation, and fever. A mouse did not appear to be injured for four days, but died on the fifth. It seemed, however, that to produce this the atmosphere must be well impregnated with the sewer air and the animals exposed for some time.

Animals kept in a kennel ten yards from the chamber containing the sewer air were not affected.

Experiments were also made with sulphuretted hydrogen and sulphide of ammonium. The latter gas produced very marked symptoms; vomiting without purging, laboured and quick respiration, and then thirst, quickened pulse, great heat of skin, and rapid sinking. The symptoms, Dr. Barker says, were "essentially and purely typhoid in character."

The symptoms of carbonic acid gas were also tried and gave results corresponding to those made out by other observers. Dr. Barker thinks that 1 to 2 per cent. of this gas is sufficient, when long inhaled, to produce decided symptoms of imperfect oxidation of the blood.

The symptoms produced by sewer air on animals are sufficiently accounted for, in Dr. Barker's opinion, by the presence of these three gases, and we need not, he thinks, seek for any other constituent.

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* "On Malaria and Miasmata." By T. H. Barker, M.D. London, 1863, pp. 76.

Ventilation of Cavalry Stables.—A "Report on the Ventilation of Cavalry Stables,"* lately published by the Barrack and Hospital Improvement Commission, entirely solves the question whether or not the men should be placed over the stables. Against this arrangement as regards the men there was much to be said, and for it there was something to be urged. But the Commission find that the question settles itself. The horse's health is the point which has turned the scale. The stables cannot be properly ventilated if the men's rooms are overhead; and, in addition, the stable cannot be sufficiently lighted. Whenever stables are to be built in future, it is recommended that the building should be one-storied; that the breadth should be 33 feet, the height of the side-walls to the spring 12 feet, and of the roof 8½ feet more. The breadth of each stall is to be 5½ feet, and there are to be only two rows of horses in each stable. Each horse is to have 100 ft. of superficial, and 1,605 cubic feet; the ventilation is by the roof, and is formed by a louvre 16 inches wide carried from end to end, and giving four square feet of ventilating outlet for each horse. A course of air-brick is carried round at the eaves, giving one square foot of inlet to each horse; an air-brick is introduced, about 6 inches from the ground, in every two stalls; there is a swing-window for every stall, and spaces are left below the doors. In this way, and by attention to surface-drainage and roof-lighting, it is anticipated that stables will become perfectly healthy.

In old stables, ventilating shafts are to be carried up, and air-bricks introduced; more window-space is to be given.

WATER.

It has long been a standing order in the French Army in Algeria that on marches great care be taken by the soldiers not to swallow small leeches in the drinking water. Some years ago, in a march from Oran to Tlemcen, more than 400 men were on the sick-list from this cause alone. Baizeau† has lately re-directed attention to this point. He relates a case in which a man had such repeated hœmoptysis as to cause anæmia; he was also believed to have phthisis; the cause was a leech which had been taken in the drinking water, and which had fixed in the pharynx. Baizeau has seen many cases in which the leech was in the posterior nares, causing epistaxis; or in the pharynx, causing spitting of blood, or even in the larynx when it has produced asphyxia; the leech seldom goes below the pharynx, but has been occasionally known to fix in the œsophagus.

The leeches when swallowed are so small that they escape notice; if seen they are generally supposed to be merely vegetable matter; they grow when they have fixed themselves; once fixed they do not easily move or fall off spontaneously. In Oran some streams are so infested with them that their water cannot be used. The civil population suffer; horses are more often attacked even than men, and the veterinary surgeons have daily to remove leeches from the mouth and pharynx of horses. As remedies the Arabs use tobacco fumigations. Baizeau recommends injections of salt and vinegar.

FOOD.

The curious subject of the diseases produced by entozoa in food has been somewhat enlarged during the year.

There have been several more outbreaks of the Trichina disease,‡ showing not only that the symptoms are quite easily recognised, but that this affection is by no means uncommon in Germany. It is curious that, at present, it has not been described either in this country or in France, but, doubtless, the disease must prevail here also. In all cases, the local muscular symptoms seem to be those which first excite suspicion; the violent diarrhœa produced by the rapid breeding and irritation of the Trichinæ may occasionally be absent or slight. The variation of the fever (temperature) from the normal type of the specific fevers is another diagnostic mark of great moment. As the symptoms were given in last year's Report, it is not worth while to repeat them. They are also detailed in Dr. Aitken's new edition of "Practice of Medicine." The most satisfactory treatment at present seems to be purgatives. In America (New York) the disease has also occurred; a whole family were poisoned, and one death occurred, from eating a ham which was found to be infested with the Trichina spiralis.* The distribution of the Trichinæ throughout the body appears to occur in two ways, by the worms piercing the coats of the intestines and other structures, and by direct transference with the circulation if they happen to perforate a vessel.

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* "Blue Book." Report signed by Sir Richard Airey, Captain Galton, Dr. Sutherland, Dr. Logan, and Captain Belfield, 1863.

† Archives géneral de Medecine. Août 1863, page 161.

‡ Sainter in "Virchow's Archiv." Band 29, p. 215, and Tungel in same Journal, p. 224. In Sainter's cases there was no microscopic proof. An anonymous writer in the "British Medical Journal" for January 1864, who gives an account of an outbreak at Hettstaedt (Prussia) exaggerates the mortality; and it is indeed implied the disease is always fatal. At present the exact mortality is not known, but it is probably under 20 per cent.

In another country another entozoic disease has now been proved to be the most important cause of sickness and mortality, and it is not a little singular how greatly the removal of this one condition will improve the health of a whole community. In Iceland, the affection caused by the echinococcus has now been fully described by Leared and Krabbe.† So common is echinococcus disease of the liver that one-sixth to one-eighth of the whole population suffer (10,000 out of 64,000 inhabitants). This disease has existed for a long time (probably hundreds of years), but has been singularly overlooked, or distinguished by the names hepatalgia, infarctus of the liver, liver obstruction, liver-plague, or sometimes hydatid disease.

The disease is more common in the interior and on the highlands of Iceland, and among the people following agriculture than on the coast; it is most usually chronic, and is not confined to the liver, though it is most frequent there. It is not confined to man but affects, to an immense extent, cows and sheep. In all cases the echinococci are derived from the tænia echinococcus of the dog. The great causes of the spread of the disease are to be found in social conditions. Compared with the population there are an immense number of cattle, sheep, and dogs (eleven sheep and cows, and six dogs to one inhabitant), and men and beasts live together; the greatest want of cleanliness prevails; dead animals and fish are kept rotting in the houses, and then, without cooking, are sliced and put in salt; in addition, the urine of dogs and even their fæces are taken occasionally, though rarely, as medicines. In this way, the echinococci are continually finding their way in; and a complete change of social life and habits is the only thing which can remove the disease.

REMOVAL OF EXCRETA.

Removal by Water.—In a paper on the "Utilization of Town Sewage," by Mr. Lawes,‡ we have the present opinion of perhaps the most competent person on this question of deep interest both to physicians and to farmers. Mr. Lawes gives an analysis of the evidence taken before the Committee of the House of Commons and before the Commission (*vide* the Report on Hygiene of last year), and then states his own conclusions.

When mixed as under the present system of water-closets and sewers, with a very large proportion of water, the sewage matter becomes so dilute (1 ton of London or Rugby sewage contains only from 2 to 3 lbs. of solid matter (as to necessitate an enormous quantity of water to be brought on the land to supply a very small amount of fertilising matter. The plan is, in fact, unremunerative. "The question of the sanitary arrangements of our towns," writes Mr. Lawes, "was taken up by engineers before agricultural chemistry was much studied. and they have committed us to plans which, though they effectually remove the noxious matters from our dwellings, must greatly limit the area and mode of their agricultural utilization, and which, at the same time, have tended greatly to the pollution of our streams. To say nothing of the enormous cost that would be involved in entirely subverting the present methods of removing the excrements of the inhabitants of our large cities from their dwellings, it must be admitted that no feasible scheme has yet been proposed by which this could be accomplished without the aid of water."

This opinion, therefore, comes to this,—that water must be employed to remove excreta, and that the enormous dilution destroys the agricultural value.

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* American Medical Times. February 1864.

† "Virchow's Archiv." Band 27, p. 225.

‡ "Journal of the Royal Agricultural Society," No. 50. p. 65. 1863.

Removal by the Dry Method.—The opinion that water is necessary to remove excreta is, however, questioned by some agriculturists. In former Reports notices were inserted of the various dry plans, and especially of the operations of the "Patent Manure Eureka Company," now in operation at Hyde.

The advantages of the "earth system" over the "water system" in the removal of excreta have been strongly urged by the Rev. Henry Moule.* Instead of water being used to carry off the sewage, dry and sifted earth is added to the soil. Ordinary garden surface-soil will answer, or a subsoil containing a large proportion of clay, or if this be scarce, an admixture of coal ashes or street-sweepings may be used. From time to time the mixture is removed and used as manure. It has long been known that earth instantly deodorizes sewage; and Mr. Moule states that the earth, when dry, recovers its power, and may be used five or even seven times over before being finally applied as manure.

In practice, the dry soil is allowed to fall out of a box into the receptacle after it has been used; and closets are now made on this plan, water being entirely avoided.

It is stated that the manure thus obtained is extremely valuable in agriculture; and this can readily be believed when it is remembered that the above plan is really that which has been employed for ages by the Chinese, and also, in a rude way, by many cottagers in England.

In considering these and other schemes, physicians have to keep steadily in view the object they wish to reach,—that object is the most effectual and speedy removal of sewage matter. If the agricultural value can be retained so much the better; but sanitary considerations must be paramount. We know the advantages and disadvantages of the water system, and we are aware that there are cases in which it is inapplicable, either from want of fall, or deficiency of water. We do not yet know the disadvantages of the earth or the Hyde system. Is it safe to retain fœcal matter, even when mixed with earth or other substances, in our houses for several days or perhaps weeks? Is decomposition so completely prevented that we can adopt this plan not only without inconvenience, but without fear of any bad results? When such sewage is applied to land near our dwellings, is it perfectly harmless? These are all points on which the evidence is deficient.

From some information I have obtained from a friend, of the practical working of the earth-closets, it would seem that this plan is not well adapted for private houses, but can be used for workhouses, prisons, &c., where a good deal of labour is at command.

In India the system of "dry conservancy" is now being largely carried out, especially at the stations where water is not procurable in proper quantity. The rules to be attended to are given in a Memorandum issued by the Quartermaster-General of the Bengal army, and published in the Madras Medical Journal,† and, for the information of Medical Officers in other colonies, it may be well to epitomize this Memorandum. The general arrangement of the privy is that given in the standard plan of the Bengal Government (1858). It is a series of seats open at the back, where there is an inclosed space for the convenience of the sweepers who remove the soil.

The height of the seat is 18 inches; a moveable pan 8 inches in depth, resting on a solid foundation 9 inches high, is placed below so that it exactly fits in under the seat. In rear of the seats is an inclosed space where a sweeper is constantly stationed; directly a pan is used he removes it, empties the contents into an iron receptacle, rinses it out, pours the rinsings into the receptacle, and then replaces the pan, leaving in it two inches depth of clean water.

Once a-day the pan is scrubbed inside and out with wood ashes or broken-up charcoal, and once a-month is coated with dhoona (resin).

The pan is made of enamelled iron, or if this is not procurable, of kiln dried glazed earthen vessels.

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* "Removal and Utilization of Excrementitious Matter." By the Rev. H. Moule. "Journal of the Royal Agricultural Society," (published also as a pamphlet), No. 50, p. 11. 1863.

† November 1863, p. 415.

The urinal is an enamelled iron pan, with an upper rim sloping upwards and outwards, so as to extend 1½ inch beyond the side of the vessel, to catch drippings; it stands in an iron tray 1¾ feet in diameter, filled with broken-up charcoal and wood-ashes. The urinal is emptied night and morning, and scrubbed once a-day with wood-ashes and charcoal.

A privy should contain eight seats, and is calculated for a company of 100 men (one seat to twelve men). Three receptacles are provided for each privy, two for the soil and one for the urine; they are kept behind the screen wall in rear, and the sweeper empties everything into them. They measure (apparently, for the dimensions are not explicitly given) 3 feet by 8 inches and 18 inches high. The exact size is a matter of no moment, provided they are not too large to be easily handled. They are air-tight.

The fæces and urine being collected in these receptacles, they are removed daily in carts provided for the purpose, and are carted away to pits at least half a mile from the nearest barrack. Here the receptacle is emptied into pits each 10 feet deep, 6 feet in diameter, and 9 feet distant from each other, so as to allow a cart to pass; one set of pits is used for soil, one for urine; quicklime is thrown into the first, but not into the second, on account of the action of the lime on the urea. One privy pan takes three ounces of quicklime, one receptacle six ounces, and twenty ounces is thrown into each pit where the sewage of a regiment is collected.

An orderly is appointed to inspect every privy twice daily, and the sweepers are placed under his orders. The officer commandiag each battery, troop, or company inspects the privies, &c., four times in a month, and reports to the officer commanding.

There can be no doubt of the general excellence of this plan; but some suggestions may be made.

Why should all this rich fertilizing matter be thrown into pits, which become in fact cesspools, and, though closed up now, may at some future time be opened. Why not apply it to the land at once? There is no spot in India, even the most sandy plain, where this sewage would not suffice to grow any amount of fresh vegetables for soldiers. Use it for soldiers' gardens, as all our present experience shows that the disinfecting power of earth is so great that there is no danger. It might be kept at one-third of a mile from the barracks, to remove all possible risk.

Then, again, why use lime, which is by no means so good a disinfectant as dry earth, and more costly? And why not, by a simple arrangement like that proposed by Mr. Moule, allow dry earth to fall into the seat, and thus lessen the amount of labour required? In many colonies it would be impossible to command the services of ten men per regiment constantly for this duty alone, and even in India it may be questioned whether the rise in the price of labour which is now going on will long permit such a plan to be continued. By the earth closets there would be a great saving of labour, as the pans need not be emptied oftener than once a-day.

EXERCISE.

The great amount of carbonic acid produced during exercise is now well known, and it is of the greatest importance so to arrange dress and accoutrements as not to hinder the rapid elimination of this gas. In connection with this subject some late experiments may be found interesting.*

Sczelkow has made experiments on animals to determine the precise amount of carbonic acid given off in the muscles; some of the observations were made by stopping the circulation in the lower extremities, and then noting the changes in the total amount of CO_2 given off, and O absorbed; in other cases the amount of the gases of the blood after it had circulated through the muscles at rest and in action was determined.

In the first series (when the circulation in the legs was arrested) the total amount of CO_2 given off by the lung was lessened 15·4, 10·4, and 13·6 per cent. in three experiments; in two other experiments it was increased, but this was owing to the struggles of the animal.

In the second series the CO_2 in the venous blood of a tranquil muscle was found to be 6·7 per cent. richer in CO_2, than the arterial blood; exercise increased the excess to 10·79 per cent.; the circulation in the contracting was much quicker than in the tranquil muscle, so that the total amount of CO_2 given off must have been largely augmented. The oxygen in the blood issuing from the muscle was much less than in the arterial, viz., 9 per cent. in the blood of the tranquil muscle. In the contracting muscle the O in the venous blood sank to 1–2 per cent. There is, therefore, in tranquil, and in a much greater degree in contracting muscles, an absorbtion of O, and an increase of CO_2; but it would seem that during contraction the amount of CO_2 given out for one volume of O absorbed is greater than when the muscle is tranquil.

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* Sczelkow in "Henle's Zeits." 1863. Band 17, p. 106.

This remarkable circumstance was further investigated by means of an ingenious apparatus, and it was proved beyond doubt not only that the gaseous changes are greatly heightened in contracting muscles, but that the increase of the CO is so far in excess of the O which disappears, as to show either that CO_2 is formed during contraction by the decomposition of substances rich in O (such as formic or acetic acids), or that O obtained otherwise than from inspiration, is taken to combine with carbon.

SPREAD OF THE SPECIFIC DISEASES.

Yellow Fever.—The spread of yellow fever by direct communication has received another illustration. So many examples have now been noted since the celebrated cases of the "Bann" and the "Eclair," that if any doubt existed in the minds of any one, it must now be removed. The instance now to be detailed is most conclusive:—

The "Anne Marie"* sailed from Havannah on the 30th June, 1861, after being there a month, while a severe epidemic yellow fever prevailed there; while there none of the sailors suffered, except from a little depression, loss of appetite, and a certain tendency to vomiting.

After leaving Havannah for France there was no illness for seventeen days (on fut dixsept jours sans un seul malade.)

On the 1st July two sailors were attacked without precursory symptoms, with violent shivering, pallor of the face, injection of the eyes, congested lips, and continued delirium. One died in 23 hours, the other in 110 hours.

On the following day seven other persons were attacked, making in all nine cases out of a crew of sixteen persons. No more deaths.

The ship arrived at Saint Nazaire, in France, on the 25th July, with seven men ill, but all convalescent; it was thirteen days from the date of the attack of the last case.

The "Anne Marie" was *not* placed in quarantine, as she had had no death and no fresh case during the last ten days of her passage.

Near her were anchored two coasting ships of the Imperial navy, viz., "Le Chastang" and "Le Cormoran." The former touched her. Three other vessels, "L'Orient," "Les Dardanelles," and the "Chequipa," were also near the "Anne Marie."

According to the custom of the port of Nantes and Saint Nazaire, the sailors of the "Anne Marie," being only engaged for the voyage, quitted the vessel on arrival, and were dispersed throughout the town. The commander, who had been also ill, went home, and the vessel was left to the second in command. Their place was taken by seventeen fresh men, who came to discharge the cargo (déchargeurs), which consisted of good sugar in excellent condition. All these seventeen fresh men were strong and very robust. The discharge of the cargo commenced on the 27th July, and was completed on the 3rd August (eight days.)

1. "Le Chastang" having been in contact with the "Anne Maria," left on the 29th July, and sailed to Indret-on-the-Loire, forty-four kilometres distant. Her crew, five in number, were in perfect health when they arrived at Indret. On the 1st August, three days after leaving Saint Nazaire, a man fell sick; then the four others; by the 10th August all five were dead.

These men had all been on board the "Anne Marie" for about a quarter of an hour.

2. "Le Cormoran" arrived at Saint Nazaire the 31st July, and was in a posi-

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* "Ann. d'Hygiene," 1863. Oct., p. 416.

tion where she was fully exposed to the emanations of the cargo of the "Anne Marie," then in course of discharge. "Le Cormoran" quitted Saint Nazaire, and arrived at Lorient on the 10th August.

Her crew was composed of six men, all in perfect health, on the 10th August.

On the 14th two were taken ill and died on the 26th, of decided yellow fever.

It is not stated whether any of the crew of the "Cormoran" had been on board the "Anne Marie."

3. The three other vessels also had some cases, eighteen in all. (The five vessels had altogether twenty-three cases.)

4. The "déchargeurs" were attacked with yellow fever to the extent of twelve or thirteen men out of seventeen; many of them died.

All these persons were, or may have been, exposed the emanations of the ship, but some were attacked who were not near the ship. A physician (at Indret?) who is said never to have been near the town of Saint Nazaire, was attacked with yellow fever and died, after attending four men with yellow fever.

The sailors who landed from the "Anne Marie" convalescent from yellow fever all remained well, *and did not carry the fever.*

The men who carried the cases of sugar to the railway, but who were *not* on board the "Anne Marie" did not suffer.

Cholera.—Mr. Dickenson, of the Bengal service,[*] has published a very useful pamphlet on the measures to be taken on occasion of an outbreak of cholera. Attention is directed to every point; the immediate disposal of excreta; the water supply; the soil; shifting camps, &c., are noted, and Sir H. Rose's Order of the 7th April, 1862, is appended. Medical Officers will find this little book a very useful "reminder" of the routine of their work during cholera.

Typhoid Fever.—Dr. Barker[†] has related a very considerable number of cases (thirty-six in all) of the development of typhoid fever (it is called typhus in some of the cases, but enteric fever is doubtless meant) from bad drains and cesspools. Many of these cases are very striking, both as regards the production of the fever and its removal. Believing, however, in the direct production of typhoid fever by fœcal effluvia, Dr. Barker does not appear to have inquired into the possibility or otherwise of the specific poison being introduced on some way or other; and, therefore, this important part of the subject remains still doubtful. Dr. Barker, fully adopting the view that typhoid fever (and the other specific diseases) arises from a peculiar and special poison, believes that this poison arises in certain states of animal and vegetable decomposition. A careful examination of his cases, while it confirms the fact of the disease being propagated especially by bad drains, cesspools, &c., has not given decided evidence as to the first production of the poison.

Measles.—The production of measles from decomposing straw, asserted by Dr. Salisbury, of Ohio (see Report on Hygiene of last year), has been denied on experimental evidence by Dr. Woodward, of the United States Army.

SIZE AND WEIGHT OF FRENCH SOLDIERS.

In the paper quoted below,[‡] M. Boudin has collected much curious information, especially on the regulation height of the French soldier at different epochs. The following Table condenses the most important points:—

	In Metres.	In Inches.
Minimum Height fixed in 1701	1·598	63
" " 1799 to 1803	1·598	63
" " 1804 " 1815	1·544	61
" " 1818	1·570	62
" " 1830	1·540	61
" " 1832	1·560	61½

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[*] "The Hygiene of Indian Cholera." By James C. Dickenson. Agra, 1863.

[†] "On Malaria and Miasmata." By J. H. Barker, M.D. London, 1863.

[‡] "On the Size and Weight of Men of different Nations and, specially, on the military aptitude in France." By M. Boudin, Recueil de Mémoires de Med. Mil. Mars, 1863, p. 169.

Since 1832 the minimum height for the infantry has not been modified.

From 1818 to 1820 the mean height of the classes furnishing the recruits was 1·657 metres (65 inches), and that of the army was 1·670 metres (63¾ inches).

From 1831 to 1860, the number of men rejected annually for not reaching the standard of 1·56 metres (or 61½ inches) varied from 9·28 to 5·6 per cent.; but there was a gradual though not perfectly uniform lessening in the number of rejections on this ground in successive years. Or, in other words, the height of the men forming the conscript classes has been gradually augmenting. On classing the conscripts by Departments, it appears that the number of exemptions for want of stature, from 1831 to 1860, have remained stationary in 4 Departments, have augmented in 19; and lessened in 63.

This must indicate a gradual improvement in the nutrition and bodily development of the population, consequent, we may suppose, on the long term of peace and the lessened number of strong young men carried off from the population. M. Boudin states that, from a study of the height of men in the Departments, it is evident that *race* has a predominant influence.

The height of the French Army in 1861 and 1862 is as follows:—

Height in Metres.	Effective 1st Jan. 1861.	Percentage.	Effective 1st Jan. 1862.	Percentage.
1·560 to 1·580	22,919	5	27,323	6
1·580 1·600	42,178	10	40,363	9
1·600 1·620	60,620	14	55,159	13
1·620 1·640	65,409	15	58,473	13
1·640 1·660	52,735	13	49,592	12
1·660 1·680	47,808	11	44,638	12
1·680 1·690	35,966	9	33,633	8
1·690 1·710	35,769	9	40,562	10
1·710 1·730	27,297	7	33,792	8
1·730 1·760	17,638	4	26,850	6
1. 760 and above	12,145	3	17,631	3
	420,488	100	428,048	100

It appears that 15 per cent. are below 63 inches; that more than 50 per cent. of the French Army are between 63 and 66 inches in height; 32 per cent. are above 5 feet 6 inches; and 7 per cent. are above 5 feet 8 inches.

By a decree of 1860, the height for the respective arms varied from 1·76 metres (69 inches) the highest (carabiniers), to 1·56 (61½ inches) the lowest (for the infantry of the line and chasseurs).

The stature of the English Army is taken from the Army Medical Report of 1860. In that year, 1·5 per cent. were below 5 feet 3 inches; 49 per cent. were between 5 feet 3 inches and 5 feet 6 inches; 49 per cent. were above 5 feet 6 inches; and 15 per cent. were above 5 feet 8 inches.

The weights of the French conscripts are not given. It may be useful to place here those of the English recruits of 1860, as given by Dr. Balfour:—

WEIGHT OF 10,000 RECRUITS.

Below 100 lbs.	157
From 100 to 110 lbs	663
110 120	2,296
120 130	2,817
130 140	2,090
140 150	1,254
150 160	488
160 170	180
Above 170	55
Total	10,000

III.—Soldiers.

Military Hospitals.—A new edition (4th) of Miss Nightingale's admirable "Notes on Hospitals" has been published. Much of it has been re-written, but the essential features remain the same. It will, of course, be read by every one.

American Hospitals.—Dr. Hammond, in his work on Hygiene, enters at great length into the principles of hospital construction, and describes some of the American hospitals constructed during the war. He adopts *in toto* Miss Nightingale's opinions, and endorses them by his own weighty experience. At the beginning of the American war the old plan of arranging the building in squares was adopted; but this is now quite disused, and the pavilion system is universally used. The following are Hammond's recommendations:—

In a *permanent Army Hospital* the length of a ward for 50 patients is to be 175 feet, the width 25 feet, and the height 14 feet. Cubic space, 1,200 feet, and superficial space 87 feet. The general arrangement of the windows, closets, &c., is precisely that recommended by Miss Nightingale and the Barrack Commissioners.

All Temporary Hospitals built in time of war, and made of wood, are advised to be one-storied, and ventilated at the ridge; each ward to contain 50 men; the length to be 137½ feet; the width 25 feet; the height 12 feet to the eaves; cubic space 960 feet.

Ventilation is provided by an opening 10 inches wide at the ridge along the whole length. It is covered by a roof 4 inches above, and projecting 2 feet on each side, with a strip hanging from the side to prevent the drifting in of snow. At the bottom of the ward, under the beds, holes are cut capable of being closed by sliding doors. "Such wards are always comparatively cool and fresh. The experience of the summer of 1862, when many hospitals ventilated on this principle were in operation, and when they were, from the large number of sick and wounded suddenly thrown upon them, crowded to the utmost limits consistent with sanitary requirements, demonstrated that the air was always cool and free from offensive odours." (Page 355).

In winter, the stove is inclosed in a zinc jacket, and fresh air is led by a wooden conduit to this space, and is thus warmed. A wooden box, reaching from floor to ceiling, open at one side, stands near the stove, and the flue pierces this about half-way up, and runs up it so as to cause an outlet-draught.

For temporary hospitals I have long been convinced that nothing is better than these simple plans. Ventilation by the eaves or by the gable does not answer so well as the ridge-ventilation. At the same time, gable-ventilation at both ends should be also provided by having a large flap which can be let down in summer so as to cause a thorough movement of air from end to end.

Dr. Hammond especially refers to two points connected with the material for construction. He objects entirely to earth-floors, believing that the earth absorbs organic matter; and he states that the use of the sun-dried brick for walls is objectionable, as the earthy walls absorb effluvia. He has seen several cases of pyæmia originate from this cause.

At the first outbreak of the American war the hospitals were small, some being intended only for 250 patients; but as the war went on, much larger accommodation had to be provided. The West Philadelphia Hospital was constructed with 34 pavilions for 48 men each, and has contained, with tents, 3,124 persons, including attendants. It is the largest hospital but one in the Northern States. The pavilions are 167 feet long, 24 feet wide, and 13 feet high at the eaves; 20 feet are occupied as closets, bath-room, and nurses' room. They are disposed on either side of a central corridor, which is divided into two by a two-storied building placed in the centre, and intended for the administration. There are three kitchens, two laundries, guard-room, and all other offices, including a printing office and two smoking-rooms! The cost was 200,000 dollars, exclusive of furniture. Except that the wards are longer and intended for two rows only of beds instead of four, this hospital is very similar to that designed by the late Mr. Brunel in the Crimean War, and erected at Renkioi. It may, indeed, be conluded that some plan of the kind is the best that can be adopted for temporary hospitals.

The largest temporary hospital in the Northern States is the Mower Hospital, at Cheshunt, Philadelphia. It contains 2,820 beds for patients, and 500 for attendants, in all 3,320, and its cost was 250,000 dollars, exclusiveof furniture (50,000*l.*) The Philadelphia Railroad passes close to it, and patients from the Army of the Potomac are brought to its very doors without leaving the cars. Fifty pavilions radiate from a square, or, rather, a flattened ellipsoid, which is 653 feet by 522 feet; the corridor (16 feet wide, and 2,400 feet long), runs round the inner side. The pavilions are 20 feet apart where they abut on the corridor, and 40 feet at their distant ends; each is 175 feet long (with 25 feet taken for small rooms, closets, &c.), and 20 feet wide, with a height to the eaves of 14 feet, and to the ridge of 19 feet. The administration is placed in the centre of the ellipse. The kitchen (single) projects from the inner side of the corridor towards the centre, and a railway runs from it round the corridor. The closets are at the distant end of the pavilions, and consist of water-latrines, through which a stream of water constantly flows. More than 150,000 gallons of water are used daily, or about 50 gallons per head. A magnetic telegraph and fire-alarm apparatus connects all the offices with the quarters of the surgeon in charge. There are 30 medical officers, 8 stewards, 3 chaplains, and 495 cooks, nurses, and other attendants. The consumption of gas is nearly 6,000 cubic feet per noctem.

It was found that the wards were too narrow, and that 24 feet instead of 20 feet should have been allowed.

The M'Clellan Hospital, situated also near Philadelphia, is said to be the best in the whole Northern States; an ellipse (550 feet long and 150 wide), is surrounded by a corridor, and 18 pavilions run slantingly off from the two extremities; the offices are placed in the centre.

The Hammond Hospital, at Chesapeake Bay, is also one of the best; there are 16 pavilions projecting from a circular corridor, 1001 feet long; each pavilion is 145 feet long, 25 wide, 14 feet high at the eaves, and 18 at the ridge, and contains 52 patients, they are plastered inside, but not ceiled, and are ventilated along the whole ridge. Four buildings radiating from the centre of the circle. The wards are 36 feet from each other at the corridor, and 175 feet at the other end. The hospital will contain 750 beds.

A hospital at Lincoln is composed of 21 pavilions projecting from the two corridors, which meet each other at an acute angle; the axis of the wards are in a line with the apex, and are thus disposed en echelon; but the arrangement is not a good one.

Another hospital on Rhode Island is composed of two such systems, and the corridors form a figure like the letter X. But this is also a bad plan.

At Fort Schuyler the wards are placed tangentially to an oblong corridor open at both ends. In fact there is no end to the various forms in which the pavilions may be thrown, and which will be dictated often by the nature of the ground.

It is very evident that, even in these temporary hospitals, the Americans have carried into their arrangements all those plans for saving labour for which they are noted, and which are too much neglected among us—railways; hot water distributed everywhere, magnetic telegraphs, &c.

Dr. Hammond does not inform us whether the large size of some of these hospitals (2,000 beds) is considered an objection. In this country many of us think that an hospital with 500 sick is large enough. In the American hospitals there appears to have been two or three kitchens, and if this is done the hospital is really divided as far as that most vital point of food is concerned into two or three hospitals. The pavilion system has this additional advantage that the hospital admits of easy sub-division, so that there is the less objection to the concentration of patients. But on the whole we believe that if the ground will permit, hospitals for 500 are large enough, and if there are three or four of those separated by half a-mile of ground, and connected by railways, they have all the advantage of concentration as far as stores are concerned, without the inconveniences and perils of agglomeration.

Dr. Hammond describes at some length the field hospitals of the Northern troops. He considers that tents warmed by a small camp-stove form the best hospitals. The regulation hospital tent is 15 feet square, and ought to contain six men, or eight as a maximum; it is provided with a fly, and two or three tents can be joined together. Dr. Hammond thinks not more than three should be thus joined. He objects to the conical tent. The tents are floored; if this is not done they are struck and moved once a-fortnight. "The good effects of this measure can scarcely be overrated," (p. 389.) The tents (or huts) are placed en echelon. The floors are raised one foot from the ground, and air is allowed to pass freely through this space. The Crimean naval hut with double walls and openings above and below, and with projecting eaves and ridge ventilation, was used as a model for many of the wooden huts. Dr. Hammond says (p. 397)—

"It will perhaps not be out of place again to insist on the great advantages of those temporary field hospitals over those located in permanent buildings in towns. Nothing is better for the sick and wounded, winter and summer, than a tent or a ridge ventilated hut. The experience gained during the present war establishes this point beyond the possibility of a doubt. Cases of erysipelas or of hospital gangrene occurring in the old buildings, which were at one time unavoidably used as hospitals, but which are now almost displaced for the ridge-ventilated pavilions, immediately commenced to get well as soon as removed to the tents. But in one instance that has come to my knowledge has hospital gangrene originated in a wooden pavilion hospital, and in no instance, as far as I am aware, in a tent. Hospital gangrene has been exceedingly rare in all our hospitals, but two or three hundred cases occurring among the many wounded, amounting to over one hundred thousand, of the loyal and rebel troops which have been treated in them. Again wounds heal more rapidly in them, for the reason that the full benefit of the fresh air and the light are obtained. Even in fractures the beneficial effects are to be remarked."

Austrian Hospitals.—In connection with this subject some results arrived at in the Austrian army may be noticed:—*

In 1854, at some of the stations of the Austrian Army in Hungary, the plan was commenced of treating a portion of the patients under tents instead of in the permanent hospitals, and this was continued from spring to the end of autumn. It was not without hesitation that this measure was adopted, but the permanent hospitals were in so bad a condition and so full that some measure of the kind was imperative. The results were very satisfactory; "the most severe maladies ran their course" much more mildly in the free air, *i. e.* in tents, and recovered more quickly and more perfectly than in the confined spaces of hospitals." (Kraus, p. 29.) In the following years, till the date of publication (1860), the plan was continued, and the tents were kept open farther into the winter, and it was noticed that by a sudden burst of cold weather, when the thermometer fell to freezing point at night, the sick were in no degree damaged. And singularly enough the men themselves, many of whom were severely ill, declined the offer to move them from the tents into the hospital. Taking the experience of the six years (1854-60) the following results were brought out:—

Typhoid fever in its severe forms was treated more successfully in tents than in the hospitals.

	Number.	Per 100 of Admissions.
Admitted into the Hospital	82	..
Died	25	30·49
Admitted into tents	244	..
Died	51	20·9

Attendance, diet, and medicine were the same in both, and it was to the disadvantage of the tents that they were used during the worst months of the year for typhoid, August and September, when the severest cases were admitted.

As regards the course of the disease it was shorter in the tents; there was earlier loss of headache, speedier lessening of the fever, and earlier moistening of the tongue; while in the hospital it was the third or fourh week before decided and permanent improvement set in. This occurred in tents by the 14th day. It was also noticed that in spite of the severity of the cases in August and September, there was no spreading of the disease in the tents.

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* "Das Kranken Zerstreuungs-System," von Felix Kraus; K. K., Ober Stabarzt. Wien, 1861.

During the convalescence from typhoid it was, however, noticed that the results were less favourable; bronchial catarrhs were not unfrequent, and also diarrhœa and dysentery. This occurred especially in changeable weather, and was attributed to the effect of cold on the sensitive frames of those who had lost all fever. It was therefore proposed to send the patients when convalescent into the permanent buildings.

Generally it may be laid down as a rule that it does not do to send convalescents who have been treated in rooms from any disease into tents until they have got over the sensitive period which succeeds an acute disease. It is better at once to send the severe cases of disease into tents. In other words tents should not be made convalescent wards.

Malarious Fever.—The results were not quite so favourable; the attacks of fever were not lessened in number or intensity, and it was even thought that relapses were more frequent under tents.

Small Pox.—From the 1st May to the end of September, 72 cases were treated viz., 30 in the hospital, and 42 in the tents; of the former 3 died, or 10 per cent.; of the latter none. The numbers are rather small, but the observation of the course of the disease was liable to less error. In the tent cases the eruption came out quicker and better, maturated more rapidly, and the desiccation and convalescence were not followed by any sequences. In the permanent hospital the course was longer, the stages less defined, recession of the eruption was more common, after diseases were more frequent.

Syphilis.—Common primary forms showed little difference among those in tents or rooms; but some cases of soft chancre did better in tents. In the wards, bubos, even when opened at the proper time, showed in the hot summer months, a tendency to, or an actual production of, gangrene. As such occurrences happened extremely rarely in the tents, it became a practice at once to remove such patients from the wards to the tents, and with very favourable results; there appeared to be "an improvement in vitality."

Wounds and Outer Inflammation.—Of all the cases treated in tents these showed the most favourable results. In 1859 a number of wounded (789) were sent from Italy; all severe cases were sent into tents; the slighter cases into wards.

All the men in the tents had a fresh lively look, which contrasted very strongly with the appearance of those in the wards. In the wards, though doors and windows were left open almost the entire day, and the greatest care was taken with treatment, hospital gangrene occurred, and when the gangrene parts separated the granulations were unhealthy. All this was mended at once when the men were brought into tents, the gangrenous parts separated more rapidly, and there was afterwards a more rapid reproduction. In no single case could it be ever made out that gangrene originated in a tent. This agrees precisely with Hammond's statement, previously noted.

Not less important is the fact that no case of pyæmia occurred in the tents, and the production of tuberculosis, hydrœmia, &c., following wounds was trifling. There was no death among any of the wounded treated in tents. This experience reminds us of Hennen's statement of the good effects of tents at Abrantes in 1812.

Scurvy.—In 1860 there was a good deal of scurvy; the improvement occurring in tents over that seen in the hospital was well marked.

In view of these results Dr. Kraus strongly advocates the use of tents for field hospitals in war, instead of converting buildings (often unsuited for the purpose) into hospitals. He points out also many other advantages such as easy separation, isolation, &c., all of which considerations are familiar to us. He continues—

"For a moving and operating army the tent hospitals have the priceless advantage, they can everywhere be rapidly established, if the movement of the troops and sanitary condition and communication demand it; they can be enlarged at pleasure, and as easily broken up and established in any other convenient point, advantages which in a military, administrative, and economical point of view, must be ranked very highly, and which are never or only imperfectly attained by the usual system." (p. 62.)

Dr. Kraus alludes to the usual opinions that tents are too hot, too cold, too exposed or likely to be wet, and he justly considers all these objections to be of no practical value. They are, in fact, usually *a priori* conclusions by persons who are not well acquainted with tent life.

It must be admitted, however, that administration and nursing, and even the supply of food, are more difficult under canvas; but the first may be well borne for the sake of the great advantages of tents, and the last can be overcome by establishing several small kitchens instead of one or two large ones.

The kind of tent must, however, be good; a square tent, as already said, is preferred by Hammond, but an oblong is better, with two or three poles, and with more upright sides than the common English Hospital Marquee. The ventilation should be at the top, and there should be sufficient openings. One whole side should lift up and be supported at will on stakes so as to expose fully the interior of the tent, and form a tent where the men can sit. Sixteen men in a tent is quite enough, and we have, indeed, seen Hammond's opinion that six are enough.

Contrary to Hammond, Dr. Krause thinks the best flooring for tents is earth, which can be scraped up and removed frequently, and replaced by fresh sand. This much is certain, that if boards are used, and we believe it is best that they should be, they must be removed frequently, and the earth cleaned below them. All sorts of things collect below them.

CAMPAIGNS.

War of Italy in 1859.—*Distribution of Sick and Wounded in Campaigns.*—We already know from the very useful work published by Baron Larrey,* that in the war of 1859 the French adopted the plan of distributing the sick and wounded in a great number of comparatively small hospitals. The experience at Constantinople had convinced them that the concentration of vast numbers in a few large hospitals was a fundamental error. In Italy typhus was avoided, and there was comparatively little purulent infection; in fact, the plan of widely distributing the sick was attended with the best results.

The Austrian experience in the same war was precisely similar. Dr. Kraus, in the work already referred to, gives a long and very interesting account of the disposal of the sick. This was a matter of no little difficulty. Even before Solferino, the hospitals were crowded; after Magenta the daily growth of sick was 600 to 800, and soon 8,000 men were crowded into hospitals intended for only 4,000. In Verona and other fortified places, with their narrow spaces and vitiated air, hospital gangrene and typhus appeared; the danger became great not only for the sick but for the garrison. After Solferino the influx of sick and wounded augmented still more; at the same time, especially at Verona, two great armies were in the neighbourhood; the police conservancy was bad; and the heat was excessive. As the railroad to the Tyrol could not be used for strategical reasons, the sick were sent on the route of Casarsa and Palmanuova to Nabresina; 1,200 sick and wounded daily traversed this road. The railroad, however, from Casarsa to Nabresina broke down, and the men were conveyed on bad country carts, and soon the cattle fell sick, and transport became still more difficult. At Palmanuova, Kraus saw 1,300 men, almost all wounded, who had no shelter, and for whom nothing had been prepared; two surgeons only were available for this mass of patients, and there was want of material of all kinds. Only an eye-witness, we are told, could form any conception of the misery of these unhappy victims of glorious war.

Under these circumstances, the public sympathy and interest was largely aroused; hospitals were opened in many remote places; the Empress formed one at Laxenburg; others were opened at Hetzendorf, Trieste, near Vienna, and many other places; ladies of the highest rank attended and ministered in these hospitals, with an extraordinary zeal and knowledge, and patriotic societies everywhere arose, who forwarded stores, food, and money. The telegraph was of the most essential service in rendering the distribution of the sick possible.

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* "Notice sur l'Hygiene des Hopitaux Militaires" par M. Hte. Bon. Larrey Paris, 1862.

Instead, therefore, of a few large hospitals, the Austrian sick and wounded were distributed over a large tract of country, and in many small hospitals; they were under many disadvantages of badly arranged transport and of want of care while *en route*, but still the results of the system were satisfactory; and this not only as concerned the health of the sick but the behaviour of the soldiers when placed in civil establishments and removed perhaps almost entirely from military control, was singularly good. The distribution of the sick spread no epidemic among the people, but on the contrary, epidemics among the soldiers were arrested by this dispersion.

From official returns it appears that 48,713 men were sent out of Italy. Of these 5,444 were received into civil hospitals, and 5,911 were taken into private dwellings or institutions formed for the purpose; of these 11,355 men, 78 died, or ·67 per cent. There were received into military hospitals in the provinces 23,040 men, of these 581 died, or 2·5 per cent.[*] Mortality, therefore, in the military hospitals was exceedingly small,[†] yet small as it was, it was far above the mortality in the civil hospitals, and these in their turn had nearly double the mortality of the private nursing establishments

In the hospitals near the seat of war the mortality was much greater:—

Verona	5·1	per cent of admissions.
Vicenza	6	,, ,,
Padua	5	,, ,,
Treviso	8·5	,, ,,
Mantua	2·4	,, ,,

Of course allowance must be made for the severe wounds and the more rapid illness of the patients in the military hospitals at the seat of war, but it would appear that large numbers of the severely wounded were taken to great distances in rear.

The result of this distribution of sick on the army at large was very marked; it produced an excellent moral effect, and both military and medical officers became convinced of its great utility.

But in any future war, it is pointed out by Dr. Kraus that this system must be much more carefully prepared for; it must be commenced at once, and not left to be developed at the moment of pressure. By means of properly arranged appliances on railways, and water carriage, the army in the field can be left with merely its necessary field hospitals, and the terrible pressure caused by a large assemblage of sick and wounded men quite avoided.

The experience of 1859 in Italy, both on the French and Austrian side, clearly shows that the sick and wounded are not injured by judicious transport, are often indeed benefitted, evidently because they receive abundance of pure air instead of being exposed to the fatal atmosphere of a crowded hospital.

In reality, however, the plan of distributing the sick over a large area, and far removed from the army, is no novel expedient. The Prussians adopted it in 1812-13, and in this way partly avoided the effect of the spotted typhus, which ravaged the French Army. And in the Peninsula the policy of Sir James McGrigor, as far as can be gathered from his autobiography and the various papers and works written by himself and other Army Surgeons, was of the same kind. That great administrator (for there is no doubt the late chief of the Army Medical Department was so) appears to have fully recognized the immense importance of distribution, and if at times he allowed large masses of sick to be heaped together, it seems but reasonable to conclude that he was unable to act otherwise.

The lesson we must draw from the French and Austrian experience in 1859 is this; in a great campaign so enormous is the pressure of sick and wounded that the Medical Department and the military hospitals can never suffice, and the nation itself must aid in the work of attending to those injured in its cause. Again, the sick and wounded must be distributed, not agglomerated, and all the inconveniences of difficult transport, imperfect care, want of discipline, &c., are more than counterbalanced by the saving of life, and the increase of hope and cheerfulness given to an army.

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[*] The returns being incomplete from some of the provinces, the deaths among the remaining men are not known, but they, in all probability showed the same facts.

[†] It was smaller in the year of war, 1859, than in the year of peace, 1858.

THE AMERICAN WAR.

The Northern American (*United States*) *Army.*—As appears to be the case in every nation, the Medical Department of the Northern Army has complained of want of independence. It is not only said to be "entirely subordinate to other authorities," but a graver evil is referred to. It is used, so we are allowed to infer "for partisan purposes, and may become the sport of every political trickster." The scheme of examination for men entering the service which was arranged by the Surgeon-General has been in effect disregarded, and men have been chosen for political reasons.

The Board of Examiners has been dissolved, having examined only 42 candidates, of whom 4 were found qualified as surgeons, and 6 as assistant-surgeons. Great consternation and discouragement appears to have been excited in the Department by the suspension of the Surgeon-General, whose administration of the Department has been marked by equal energy and success.

In January 1864 the utmost surprise was excited in this country by the trial by court-martial of the Surgeon-General for charges of peculation; charges which have, however, entirely broken down.

STATE OF HEALTH OF THE ARMY.

The statistics of the several armies have been completed up to June 1862. From July 1861 to June 1862, every 1,000 of mean strength furnished:—

Armies of Atlantic Border	...	2748·83 cases of disease.
„ Central Region	...	3368·14 „
„ Pacific Border	...	2586·60 „

In July 1863 it was stated that more than 100,000 men had been permanently invalided from the army, and at that time the average daily sick was 7 per cent. The loss among newly-raised troops was often enormous; it is stated in an article in the "American Medical Times" (July 1863), that of 9,000 select and rapidly enlisted troops who arrived in New York from New England, 33 per cent., or 1 man in every 3, were on the sick list in a few weeks; when they started for the seat of war 30 per cent. were left behind. This great loss was entirely owing to the wretched condition of the barracks and bad cooking. Two years service in the field reduces 1,000 men to 400, viz., 100 are lost in action; 300 die of disease, and 200 are invalided.*

The fevers and diarrhœas and dysenterys for the same year gave the following amounts:—

	Fevers (all kinds) per 1,000 of Strength.	Dysentery and Diarrhœa per 1,000 of mean Strength.
Army of Atlantic	288·99	646·01
„ Central Region ..	319·49	994·77
„ Pacific	60·95	319·64

The total mortality for the same year was:—

	Mortality per 1,000 of mean Strength.
Army of Atlantic	38·40
„ Central Region	82·19
„ Pacific	10·76

It seems doubtful whether true typhus at any time has prevailed; the disease so termed by Medical Officers was typhoid with cerebral complication and cases of scorbutic intermittents. In many cases the disease was of a mixed type, viz., typhoid fever impressed by the malarial poison and by a previous scorbutic condition of the body. In fact, what is well known to be one of the most common types of disease in armies warring in malarious regions, badly fed and exposed to fœcal emanations from camps. To express this state the term typho-malarial fever is being used, but the employment of such a word seems questionable, unless it is clearly defined and limited in its application.

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* "American Medical Times," August 22, 1863.

A treatise on the camp diseases of the United States Army has been published by Dr. Woodward,* an Assistant-Surgeon, who has been engaged in preparing the medical history of the war. The two hygienic points which seem to have struck Dr. Woodward most strongly are the effects produced by crowding, and by the very common prevalence of scurvy. The effluvia arising from want of ventilation and want of cleanliness he denotes by the expressive term of "crowd-poisoning." In regard of scurvy, he states that it has played a large part in the production of disease in the Eastern Armies; it is attributed to scarceness of diet and absence of fresh vegetables; potash salts, chalybeates and lime-juice are stated to be merely palliatives, and not preventives or remedies. The issue of potatoes (ordered by Congress) has not been carried out, even in the large and neighbouring armies. The dessiccated vegetables have been largely used, but are considered to be an imperfect substitute, and from bad cookery they are not liked by the men.

The typho-malarial fever is regarded by Dr. Woodward, not as a mere malarial modification of enteric fever, since the malarious taint is in many cases predominant. The change in Peyer's patches is essentially identical with that of common typhoid fever. In the camp diarrhœa, Dr. Woodward states the anatomical condition is a rapid cell-multiplication attending on the ulcerations which arise in "the follicles of Lieberkühn." The origin of measles from the penicillium of straw (as stated by Salisbury) is denied. During the first year of the war there were 21,676 cases of measles and 551 deaths, but there was also a very great mortality from sequelæ, viz., severe bronchitis and pneumonia, and a profound exhaustion. During the first year also no less than 44,000 cases of rheumatism were reported, and the yearly number of cases of diarrhœa is stated to be 200,000.

The Sanitary Commission has continued its labours; in one week alone and from one town (Chicago) there were sent 200 tons ice, 1,000 bottles lemon syrup, 200 barrels soda crackers, 20 barrels dry peaches, 20 barrels dry apples, 5,000 codfish, 50 caddies green tea, 50 half-barrels crushed sugar, 50 ounces quinine, 50 barrels stock ale, 100 quarter-barrels stock ale, 50 half-barrels stock ale, 200 musquito bars, 10½ barrels pickled cabbage, 225 palm-leaf fans, and 2,000 cans concentrated milk. We can thus form some idea of the unparalleled exertions the Americans are making to preserve the health of their men.

The Report of the Sanitary Commission show what immense difficulties have been encountered in supplying the distant armies. Of all wants it would appear that a deficiency of vegetables has been most felt in the Armies of the West.

The Sanitary Commission has constructed a new hospital railroad car. The length is 41½ feet, the breadth 8 feet 7 inches, and the cars will carry twenty-four men in beds, four in sofas, and six in easy chairs, besides a surgeon and three attendants. They are well ventilated.

RESERVE MEDICAL CORPS.

In spite of the enormous number of Medical Officers with the army (not less, it is supposed, than 5,000 have been or are in the army), they are still numerically incapable of dealing with any great emergency. After the battle of Gettysburg (as after Antietam), we are told that "hundreds of wounded men" remained unattended for days. Under those circumstances the Surgeon-General decided on forming a "reserve medical corps" of thirty men to each State. These gentlemen are to receive $100 a-month, and when called on for service are to remain at least fifteen days. In this way it is presumed that the pressure of the first few days after a battle may be relieved.

AMBULANCE SYSTEM.

In last year's Report the order of General M'Clellan organizing a transport system was given. General Meade has extended and completed this

* I have not seen this book, and only quote from reviews.

plan, and the following description may be useful as giving an account of the plan:—*

"First, the corps is the unit, and the supreme control of the ambulances, as regards their use, is confided to the Medical Director of the Army Corps. The ambulances are in the proportion of three to a regiment. Three men are assigned to an ambulance—one driver and two stretcher-bearers. This gives nine men to a regiment, who are commanded by a non-commissioned officer. mounted. The above constitutes the regimental ambulance corps, which consolidated by brigades, are commanded by a second lieutenant. The brigades are consolidated into divisions commanded by a first lieutenant, who consequently has under his command two second lieutenants, fifteen serjeants, and 135 men. The three divisions consolidated make the corps commanded by a captain, under the immediate command of the Medical Director. Add to the above one light medicine waggon (Autenrieth's), and one four-horse supply waggon for each brigade, and you have the full ambulance armament, independent of the regimental hospital waggons.

"The ambulances encamp or park by divisions, and when there are sufficient officers, the camp is formed equal to an artillery camp as to the order and discipline of the men, the grooming of the horses, and in all the appliances necessary to keep animals and waggons always effective. Minute inspection by the proper officers are made weekly; negligence, slovenliness, or unsoldierly conduct, are punished with the same rigour as in any other arm of the service. The drilling practice of the men is, of course, conducted with a view to their efficiency in their own department.

"When a movement is ordered, the sick are taken up by the train of their respective divisions, the regimental hospital waggons are ordered to join the trains, and thus the whole of the hospital appliances of each division in one compact column follows close upon its own division, under the command of the ambulance officers. Two Medical Officers, with steward and nurses, are detailed to accompany the train, and to take charge of the sick in it. Upon halting, hospital tents to the number sufficient to accommodate the sick, are pitched, a hospital is rapidly established, all the aid necessary being rendered by the ambulance corps. The train and hospital are close to the camp of the division. This plan is continued day after day in a protracted march.

"The train, as above stated, follows close upon its division. When a battle is expected, and the division deploys into line, the train halts in the rear. Now comes the most difficult and trying time of handling an ambulance corps effectively. Those who are interested in devising a system of ambulances must not forget in their theories without experience, this critical time; must bear in mind that without competent and tried officers, without men held under the strictest military rule, their finest scheme will prove a failure at the time when the services of the ambulance corps are most demanded. The plan of handling the ambulance corps in an action I can present to them from experience in all the battles fought since the present ambulance system was adopted.

"In the first place, the stretcher-bearers march with the regiments to which they belong into the action. The Medical Director, with the captain of the ambulance corps, is with the General commanding the corps at the front. As soon as the positions into which the divisions in battle will be thrown are ascertained, the Medical Director communicates with the Surgeon-in-chief of division, designating the places where the division hospitals are to be located. These hospitals are composed of the hospital tents in the division, together with a house or barn, if available. The ambulances are drawn up between the hospitals and the division in front, awaiting orders. One officer of the ambulance train is with the division-commander, one non-commissioned officer with each brigade. The Medical Officers who accompany the regiments into action take position by brigades, in some sheltered location contiguous to their respective brigades. This position is known to the serjeant watching the brigade, who directs the wounded with stretcher-bearers thither. The ambulances are ordered up to the same place, to take the wounded to the division-hospitals in the rear.

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* "American Medical Times," January 1864.

"The officer at division head-quarters, as soon as the action begins, orders up the ambulances, and designates the point to which they are to go. He learns from the Medical Director or corps officer the various positions and shifting of the troops, and acts accordingly. In this manner the operations of the ambulance corps are conducted throughout the action, and subsequent to it, until all the wounded are removed from the field to the division-hospitals in the rear, where they receive professional and all other treatment necessary."

In the "American Medical Times" of April 30, 1864, is a statement of the arrangements made in the Army of the Potomac prior to engagement:—

"Previous to an engagement there is established in each corps a hospital for each division, the position of which is selected by the Medical Director of the corps. The organisation of the hospital is as follows:—1st. A Surgeon in charge; one Assistant-Surgeon to provide food and shelter, &c.; one Assistant-Surgeon to keep the records. 2nd. Three Medical Officers to perform operations; three Medical Officers as assistants to each of these officers. 3rd. Additional Medical Officers, hospital stewards, and nurses of the Division, The Surgeon in charge has general superintendence, and is responsible to the Surgeon in-Chief of the Division for the proper administration of the hospital. The Surgeon-in-Chief of Division details one Assistant-Surgeon, whose duties are to pitch the hospital tents and provide straw, fuel, water, blankets, &c., and organise a kitchen. The cooks, hospital stewards, and nurses are placed under his orders. Another Assistant-Surgeon keeps a complete record of every case brought to the hospital, and sees to the proper interment of those who die. The Surgeon-in-Chief, under the direction of the Medical Director of the corps, selects three Medical Officers as the operating staff of the hospital, upon whom will rest the immediate responsibility of the performance of all important operations. In all doubtful cases they consult together, and a majority of them decides upon the expediency and character of the operation. These officers are selected *solely* on account of their known prudence, judgment, and skill. Three Medical Officers are detailed to act as assistants to each one of these officers, one being selected to administer the anæsthetic. The remaining Medical Officers of the Division, except one to each regiment, are ordered to the hospitals to act as dressers and assistants generally.

The Surgeon-in-Chief of the Division exercises general supervision, under the Medical Director of the corps, over the medical affairs in his division. He must see that the officers are faithful in the performance of their duties in the hospitals and upon the field, and that, by the ambulance corps, the wounded are removed from the field carefully and with dispatch. Whenever his duties permit, he gives his professional services at the hospital; orders to the hospital, as soon as located, all the hospital wagons of the brigades, the hospital tents and furniture, and all the hospital stewards and nurses; notifies the captain commanding the ambulance corps, or if this be impracticable, the first lieutenant commanding the division ambulances of the location of the hospital. No Medical Officer is allowed to leave the position to which he has been assigned without permission. No wounded are sent away from any hospital without authority from the Medical Director of the Army. Previous to an engagement, a detail will be made by Medical Directors of corps of a proper number of Medical Officers, who will, should a retreat be found necessary, remain and take care of the wounded.

ON THE VALUE OF TASTE AS A MEASURE OF QUANTITY IN SOLUTIONS OF DIFFERENT ALKALINE AND EARTHY SALTS IN DRINKING WATER.

By F. S. B. F. de Chaumont, M.D., F.R.C.S.E., Staff Assistant-Surgeon.

These experiments, undertaken at the instance of Dr. Parkes, were instituted for the purpose of ascertaining how far taste could be depended upon in roughly estimating the quantities of different salts in drinking-waters. The results, few in number as they are, are sufficiently remarkable, and clearly indicate that the sense of taste is little, if at all, to be relied upon.

The method followed was to prepare solutions of pure salts of different strengths with distilled water, and to get as many persons to taste them as possible, recording the opinions of each. I shall record in detail the opinions in the case of chloride of sodium, merely to point out the extraordinary diversity; but in the other cases I shall mention the conclusions only.

I. *Chloride of Sodium.*

105 grains in the gallon was at once distinguished as markedly brackish.

70 grains in the gallon elicited the following opinions:—

1. Faintly brackish.
2. Faint taste of soda.
3. Distilled water.
4. Slight taste of wood.
5. Distilled water.
6. Insipid—thought distilled water tasted metallic.
7. Distilled water.

A solution of 35 grains in the gallon was pronounced sweetish by five persons; thought to have no particular taste by three; one said it was metallic; and another that it contained either magnesia or sulphuretted hydrogen!

43 grains in the gallon. Five glasses all the same. The first person gave the following:

All five distilled water.

The second person:

All five distilled water.

The third person:

Nos. 1 and 4 brackish, the rest distilled.

The fourth person:

No. 1. Soft.
2. Bad, brackish.
3. Rain-water.
4. Harder than No. 2.
5. Organic matter.

The fifth person:

No 1. No taste.
2. Sweetish.
3. Nothing particular.
4, 5. Same as No. 2.

The sixth person:

No. 1. Good.
2. Boiled.
3. Not a good taste.
4. Horrible.
5. Very bad.

The seventh person:

No. 1. Salt.
2. Distilled.
3. Rain-water.
4. Distilled.
5. No particular taste.

The eighth person:

No. 1. Contains iron.
2. Like dilute Harrowgate water.
3. Flat.
4. Peculiar and flat.
5. Saltish.

The ninth person:

No. 1. Insipid.
2. Slightly brackish.
3. Same.
4. Bitter.
5. Slighly pungent.

The tenth person:

All five sweetish.

75 grains in the gallon was described by the majority of persons as either salt or brackish.

It will of course be understood that the composition of the water was unknown to the tasters at the time of tasting. From the above I think we may conclude that 70 grains in the gallon of chloride of sodium are unappreciable by most people, and that 75 can be detected by nearly all.

II. *Chloride of Potassium.*
15 grains in the gallon cannot be detected.
20 grains in the gallon are distinguishable by most persons.

III. *Chloride of Magnesium.*
45 grains in the gallon cannot be detected.
50 grains in the gallon are *doubtfully* perceptible.
55 grains are distinctly perceptible.

IV. *Bromide of Potassium.*
100 grains in the gallon would appear to be barely perceptible.
105 grains distinctly so.

V. *Sulphate of Calcium.*
25 grains in the gallon *doubtfully* perceptible.
30 grains in the gallon distinctly perceptible.

VI. *Nitrate of Potassium.*
40 grains in the gallon barely perceptible.
45 grains in the gallon distinctly perceptible.

VII. *Nitrate of Sodium.*
Anything under 120 grains in the gallon would appear to be hardly perceptible.
130 distinctly perceptible.

VIII. *Nitrate of Calcium.*
15 grains in the gallon barely perceptible.
20 grains in the gallon distinctly perceptible.

IX. *Carbonate of Sodium.*
55 grains in the gallon cannot be detected.
60 to 65 grains in the gallon generally perceived.

X. *Carbonate of Calcium.*

Finely pounded Iceland spar was suspended in water, and carbonic acid gas passed through it for a considerable time. After standing for a time the clear liquid was decanted off and analysed, when it showed the presence of 30 grs. per gallon of carbonate of calcium, held in solution by 7·35 cubic inches of carbonic acid. This gave a distinctly *rough* taste. Diluted to one-half (*i. e.,* 15 grs. in the gallon) the taste was still perceptible, but much diminished in intensity; 12 grs. in the gallon yielded a *doubtful* taste; 10 grs. in the gallon were quite unappreciable.

It is to be noted that in every case a taste was communicated to the water but insufficient to enable the taster to say what salt was in excess. It would appear that smaller quantities than the above would suffice to counteract the taste of carbonic acid, and render well aërated drinking-water flat, although they would not be enough to be perceived in distilled water.

XI. *Iron.*

In the case of iron taste detects a very minute quantity which there is little danger of confounding with another salt. As small a quantity as 0·2 grains per gallon communicates a perceptible taste to water, although it is barely appreciable by the ordinary chemical re-agents. This is metallic iron, and is equivalent to 0·257 of protoxide of iron, 0·296 of peroxide of iron, 0·543 of protosulphate of iron.

A BRIEF RECORD OF ARRANGEMENTS AT HALIFAX FOR THE LANDING OF THE EXPEDITIONARY FORCE FROM ENGLAND, AND FOR ITS OVERLAND TRANSIT TO CANADA.

By J. D. McIllree, Esq., Deputy Inspector-General of Hospitals.

The unhappy state of affairs throughout the United States for many months previous to the occurrence of the "Trent" affair, gave rise to apprehension, on the part of the authorities doing duty in this Command, that the apparently unrestrained feelings of our republican neighbours, displayed by armed demonstrations at no great distance from our defenceless boundary line, might possibly result in aggression that would compromise the friendly relations existing at the time between the two countries, making resistance on the part of the British Government imperative and immediate, first involving, as a matter of necessity, the people of these provinces, and calling into action at once the available military resources of the Command.

The news of the "Trent" affair had reached Halifax some considerable time before the determination of the British Government, consequent on the reception of the intelligence in England, was known. The arrival at Halifax from England on 21st December, 1861, of the royal mail steamer "America" (on her voyage to New York) with despatches from the authorities at home to the Lieutenant-Governor, and the Major-General Commanding on this station, decided in a very unmistakeable manner the opinion of the British Government, disclosing at the same time the quick and determined action which followed in the equipment and embarkation of an armed force to this country, the first instalment arriving in the steamers "Niagara" and "Australasian," on the 26th of the same month, giving little time for preparations for so large an addition to this garrison, and at a period of the year of all others so unfavourable for such an occurrence in this climate.

Halifax, being the point from which nearly the whole of the expeditionary force was destined to start *en route* to Canada, was at once transferred from a quiet garrison town, with accommodation only just sufficient in barracks and hospitals for the troops then occupying it, to a scene of great activity.

The circumstance of the River St. Lawrence presenting an impassable barrier at this season of the year to the transit of troops direct to Canada from England, together with the difficult and very dangerous navigation of the Bay of Fundy, with its dense fogs, and extraordinary tidal influences, pointed out Halifax, with its easy access seaward, its safe and magnificent harbour, as the rendezvous for the large force destined for service throughout British America, at this period constituted into one command in the anticipation of war.

It now appeared clear that it was not impolitic to anticipate beforehand the occurrence of events which would require the energy, forethought, and zeal, of all concerned to conduct to a successful issue.

It had been thought not unlikely that, in consequence of the smallness of the force doing duty in this part of the command at this period, and the exposed and defenceless state of our frontier, the Americans belonging to the provinces nearest our own, with or without the consent of their own Government, might on so tempting an occasion endeavour to extend their territory, and make an inroad for that purpose on British soil.

For any such-like emergency contemplated measures had been pre-arranged and fixed upon as far as possible or prudent, but, when it became known on 21st December that war was really imminent, and that the arrival of troops from England must be expected to follow in quick succession, at Halifax, there was no longer any necessity for reserve, and it was decided that immediate preparation for the reception and temporary accommodation of a large force was imperative, including the arrangements necessary for the transit of the troops to Canada, *viâ* St. John and St. Andrew's, New Brunswick, under the manifest difficulties of climate and dangerous land route along the frontier line of an enemy's country.

The first great object to be attained on the emergency was to provide for the new troops against the destroying cold of a Nova Scotian winter, in the proper housing and feeding of the men.

The former appeared a very difficult task, because the public buildings were full, and it was well known that there were few private establishments which could be procured fitted for temporary barracks ; but, happily, on the occasion in question the needful provision in barrack and hospital accommodation was eventually secured, at a considerable cost, of course, to the public, through the energetic action of the Major-General Commanding, not only at Halifax, where the first shock of responsibility was felt, but throughout the whole district, along the line of march which the troops subsequently took through New Brunswick up to "Rivière du Loup," on the St. Lawrence.

During the short interval which elapsed between the receipt of the notification from England of the embarkation of an expeditionary force for this country, to the arrival of the first troop ship, on the 26th December, with the 1st, 2nd, and 3rd Battalions 10th Brigade of Royal Artillery on board, the decided measures employed had removed the primary anxiety felt for the safety of the new troops, who, on arriving at Halifax, marched into comfortable quarters, got up no doubt with haste, but provided with everything for the safety and comfort of the men.

The next object was to extend a like provision to every locality where it was probable, as far as then could be known, the troops would be temporarily or permanently established during expected events.

On the line of march being determined on, it was recommended to the Major-General Commanding that, in addition to the medical establishment of each corps or battery of Artillery, temporary hospitals should be at once established at places indicated along the route extending as far as "Rivière du Loup," which station, being the second on the line rightly belonging to the Canadian Command, it was, nevertheless, thought desirable on this occasion to include in the primary arrangements, which of necessity emanated from Halifax, where the force was to disembark, and where provision for the transit of the troops would, as a matter of course, be best understood and provided for.

Every medical suggestion was approved of, without any delay, by the Major-General Commanding, and the ready and valuable assistance of the Staff, and other military authorities, cleared the way of all difficulties for the completion of the preliminary medical arrangements submitted to the Major-General.

Staff-Surgeon-Major Dr. Wood was despatched from Halifax on the 26th of December, with full instructions to procure temporary hospital accommodation at places indicated along the line of march, and also at some intermediate halting places.

This duty was completed quite in time for all necessary purposes, and the arrangements were first made according to the supposed exigencies of the service then considered requisite in the prospect of hostilities.

On the evening of 26th December, Inspector-General Muir, C.B., arrived from England as Principal Medical Officer of the whole North American Command, and, with him, a number of Medical Officers for general service, quickly followed by a larger Medical and Purveyor's Staff, and an abundant supply of medical and surgical stores for every purpose.

This complete and timely aid from the authorities at home crowned the efforts and recommendations made at Halifax previously for the perfectness of the medical arrangements, and removed every possible obstruction to the immediate application of the means proposed for the safety of the troops under any circumstance of peace or war.

The newly-arrived Medical Officers, excepting those retained at Halifax as a reserve at head-quarters, received orders to proceed without delay overland, *viâ* Windsor, to their respective stations along the line of march, where each arrived in good time to carry out their instructions preparatory to the transit of the troops through the various posts.

Some little difficulty occurred at first, from the want of sufficient transport, in forwarding the necessary hospital equipments, medical and surgical supplies, &c., for each of the newly-formed stations, but this was quickly overcome. Wooden trestles for hospital use were constructed along the line of march, by direction of the Commanding Royal Engineer, to save the expense and difficulty of carriage from Halifax ; and it will be perhaps sufficient here to state that every necessary requirement for each temporary hospital was complete, and in its place in working order, in time for every needful purpose.

Deputy Inspector-General Dr. Fraser, C.B., having arrived at Halifax on 31st December, with orders from the Director-General to repair to St. John, N.B., there to superintend the arrangements for the troops proceeding up the country, left for his station, with other Medical Officers, on the 2nd January.

It was the duty of each Medical Officer at the successive overland stations to take charge of the temporary hospital, and all sick admitted therein, to be ready in every respect for each detachment of troops *en route*, to inspect, with the sanction of the Officer Commanding, each man on arrival, and to assist as far as necessary the accompanying surgeon during the stage halt, admit into hospital any cases requiring treatment, and obtain lists of the number and strength of each detachment ; to see that the men were quickly housed and made comfortable after arrival, and before their leaving, if early in the morning, that they were provided with hot coffee.

The medical arrangements having been thus completed, there remained nothing wanting to secure the health and comfort of the troops but the assiduous application and energy of the Medical Officers in charge, and this was given in good earnest, as the results have proved, to the great credit of each and all, and tending in a great degree to the success of the undertaking, which will hold no unworthy place amongst the past and future records of military events.

It is scarcely necessary to remark that the concessions, soon after the events alluded to, made by the United States' Government to the peremptory demands of Great Britain, happily secured, on this occasion, the continuance of peace between the two countries, and consequently simplified the measures adopted by the authorities, in the first instance contemplated in the prospect of war, but now restricted to the actual wants of the period, hereon clearly defined and easy of accomplishment ; but it is not too much to say that the actual arrangements entered into by the authorities, and placed in working order on the first demand for exertion, were quite capable of being extended or altered to future existing necessities.

On the 26th December, 1861, I had the honour of reporting to the Director-General upon the occurrences which had taken place, and forwarding copies of letters and recommendations previously made to the Major-General Commanding on the subjects alluded to.

The day following, Inspector-General Dr. Muir, C.B. (who arrived on the 26th), made himself acquainted with the steps which had been taken, approved of the same, and very generously left the direction of medical affairs in this part of the Command, already arranged, to be conducted as heretofore—starting by land route a few days after for Canada. All the Force destined for Canada and the up stations disembarked after leaving Halifax at either St. John or St. Andrew's, N.B., on the southern shores of New Brunswick.

Only 935 men eventually disembarked at St. Andrew's, but from both those stations the troops must, *en route*, pass through Woodstock, 61 miles above Fredericton, and 121 from St. John.

A return is appended, as the most certain to contain the correct strength of the Force which passed over the land route to Canada on this occasion :—

No. I.

Return showing the number of Troops which have daily arrived and passed through Woodstock, N.B. *en route* to Canada, from 6th January to 31st March 1862.

Corps.	Date 1862.	No. of Officers	No. of Men.
62nd Regiment	Jan. 6	2	4
,,	,, 11	5	107
,,	,, 12	2	104
,,	,, 13	2	104
,,	,, 14	4	104
,,	,, 15	2	104
,,	,, 16	2	104
,,	,, 17	9	161
Royal Artillery, and 1st bat. 16th Regiment	,, 18	10	154
1st Bat. Rifle Brigade	,, 19	8	160
,,	,, 20	8	160
,,	,, 21	7	166
Detachment 62nd Regiment, and Millitary Train	,, 22	12	180
,,	,, 23	8	168
Military Train, Royal Artillery, and 62nd Regiment	,, 24	5	168
1st battalion, Grenadier Guards	,, 25	8	160
,,	,, 26	6	168
,, and Royal Engineers	,, 27	7	160
,,	,, 28	7	168
,, and Royal Artillery.	,, 29	8	162
,,	,, 31	4	168
,, and Royal Artillery	,, 31	8	162
Royal Artillery, and Scots Fusilier Guards	Feb. 1	6	167
,, ,,	,, 2	6	171
,, ,,	,, 3	5	160
,,	,, 4	4	168
,,	,, 5	6	168
,,	,, 6	7	168
Royal Artillery and ,,	,, 7	10	157
,, and 63rd Regiment	,, 8	5	159
,, ,,	,, 9	4	156
,, ,,	,, 10	5	160
,, and Scots Fusilier Guards and 63rd Regiment	,, 11	6	161
,, ,, ,,	,, 12	7	168
,, Millitary Train, and 63rd Regiment	,, 13	7	168
,, ,, ,,	,, 14	7	168
,, ,, ,,	,, 15	9	168
,, 63rd Regiment and Rifle Brigade	,, 16	5	167
Royal Artillery	,, 17	6	168
Military Train, 62nd Regiment, and Officer of Medical Staff	,, 18	11	151
Army Hospital Corps, and ,,	,, 19	2	40
Military Train	,, 21	5	..
,, 62nd and 63 Regiments	,, 23	5	168
,, 62nd Regiment, and Royal Artillery	,, 26	9	170
Military Train, Royal Artillery, Grenadier Guards, and Scots Fusilier Guards	,, 28	2	82
Military Train, Royal Artillery, Grenadier Guards, and Scots Fusilier Guards, 62nd Regiment Rifle Brigade, and Army Hospital Corps	Mar. 3	1	35
Total	..	274	6,514

No. II.

RETURN showing the different Stations and Halting Places, with the distance between each, along the Line of March from St. John, New Brunswick, to Rivière de Loup, and the names of the Medical Officers employed at each:—

Name of the Station or Halting Place.	No. of miles between each Station.	Names of Medical Officers employed.	Name of Barrack, and Hospital Accommodation.
St. John, N.B. ..	..	Dr. Fraser, C.B., D.I.G.H., P.M.O., and other Medical Staff.	Barracks, Commissariat Depôt and Offices, and Garrison Hospital, with Temporary Buildings.
Petersville ..	30	Dr. Mullan, S.A.S.	
Fredericton ..	30	Dr. Bryson, S.A.S.	Barracks, Telegraph Office, and Commissariat Depôt and Offices, and Garrison Hospital.
Tilleys	29	Dr. Collins, S.A.S.	
Woodstock ..	32	S.S.M. J. G. Wood, and Dr. Robertson, S.A.S.	Telegraph Office, and Commissariat Depôt and Offices, Hired Buildings for Hospital.
Florenceville ..	23	Dr. Pennington, S.A.S.	
Grand Falls ..	24	S.S.M. Dr. Barrow, and S.A.S. O'Brien	Hired Buildings for Barrack and Hospital.
Little Falls ..	36	Dr. Mackinson, S.A.S.	
Fort Ingall ..	37	S.A.S. McDermott	Hired Buildings for Barrack and Hospital.
Rivière du Loup	42	Dr. Home, V. C., Staff-Surgeon	Ditto

St. Andrew's the second point of disembarkation, is situated 60 miles westward of St. John, and from it there is a railroad to within some 10 or 12 miles of Woodstock, the junction of the two routes above alluded to.

The arrangements of this railroad were found defective, and, the line running close to the American frontier, it was consequently thought advisable to eventually make St. John the chief starting point for the conveyance of the troops.

Means of Conveyance.

From Halifax to St. John, with only exceptional instances, the troops after arriving at the former were, on the necessary arrangements being accomplished, conveyed by sea round the western coast of Nova Scotia, across the "Bay of Fundy," to St. John, N.B., and generally in small steamers well acquainted with the dangers and peculiarities of the navigation.

From St. John the entire journey to Rivière du Loup was accomplished in sledges—a distance of 306 miles.

The journey occupied 13 days from St. John when no unusual obstruction prevented the advance of the troops, not unfrequently, however, interfered with by the violent storms and accumulations of snow along the line of march.

The first party of troops left St. John on the 1st January, 1862, and the last on the 22nd February following. Rivière du Loup was evacuated on the 13th March, and the whole Force passed through Quebec, leaving to its native solitude and gloom the country round the long line of march from the town of St. John to the St. Lawrence, recently so suddenly aroused from its wintry stillness by the almost continuous stream of life which extended for two months and upwards across its frozen surface in the transit of the large Force which had been so happily conducted to its destination, with, it may be said, scarce a casualty of any kind attributable to preventible causes.*

The men composing the Expeditionary Force, on coming to this country under the prospect before them, had three things to apprehend: the bullets of American riflemen, the effects of climate, and, lastly, the consequences of intemperance.

From the first they were fortunately saved; from the second they were preserved as far as human forethought and wise arrangement could accomplish; from the third they suffered, because no human power has ever yet been sufficient to effectually control this vice amongst British soldiers, in peace or in war.

Independently of the various agencies which have had a tendency to affect the health of the men while exposed to the severity of a winter climate in this country, on a long and hazardous journey, and while employed at various fatigue duties from time to time, there never existed any epidemic influence to complicate the difficulties to be surmounted; the constant movement of the troops from place to place would, with the consequent excitement arising therefrom, have been antagonistic to any such influences, had they existed; the character of disease, therefore, which did manifest itself, was precisely what would have been anticipated under the circumstances; and it is very pleasing to find that the casualties from all causes which did occur were not to an extent which can detract from the success of the undertaking, or the satisfaction of everyone concerned in its accomplishment.

In closing this Report, it may be remarked that no fatal case occurred amongst the men of the Expeditionary Force attributable to want of completeness in the arrangements provided by the authorities for the health and efficiency of the troops during the transit of the Force over the land route to Canada.

On the service under consideration, the men appeared on the ground well prepared in every necessary condition; nothing was wanting to preserve the troops in health and efficiency, and simultaneously with the arrival of the Force came with it every possible means for that end, personal and otherwise.

All difficulties were thereby rendered easy, and, with an entire unity of purpose amongst all concerned in the direction of affairs, success was made as certain as failure would have been under opposite circumstances.

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* Details of clothing, rations, &c., have been here omitted, as they are included in Dr. Muir's report.

NOVA SCOTIA COMMAND.

Description of the Buildings in use for Barracks or Hospitals, Guard-Rooms, &c., in the Year 1862. By J. D. McIlree, Esq., Deputy Inspector-General of Hospitals.

[Note.—All alterations or changes of a sanitary character, made in any of the military buildings, are, on the face of the return, entered in *italic* to distinguish it from last year.]

		Stations and Barracks.	Position, Exposure, Elevation above Sea Level, or above neighbouring low Grounds, or Lake or River Banks.
HALIFAX, NOVA SCOTIA.		Royal Artillery Park	To the west of the city of Halifax, facing north, but sheltered by the Citadel Hill; 144 feet above sea level.
		Guard Room	
		Cells	
		South Barracks	Below the Artillery Park, nearer the town, at base of Citadel Hill, and about 130 feet above sea level.
		Guard Room	
		Cells: Strong Room	
		Condemned Cell	
		Citadel (Fort George)	On summit of a hill 242 feet above the sea level; is exposed to all winds, and separated from the town by broad glacis.
		Guard Room	
		Cells	
		Strong Room	
		Provost: Prison	In South Bastion.
		Solitary Cells	In Cavalier.
		Convict Room	At N.E. angle of the Fort.
		Wellington Barracks	On the western side of the Harbour of Halifax, about one mile to the north of the town, and at an elevation of about 160 feet above sea level.
		Guard Room	
		Strong Room	
		Cells	
		Garrison Hospital	On north-east glacis of the Citadel, 136 feet above sea level
	Garrison Guards.	Garrison Hospital Guard	About 100 yards north of the Hospital, 120 feet above sea level.
		Magazine Guard	Near the Harbour, north of the town, 20 feet above sea level.
		Victualling Yard Guard	About 200 yards south of the preceding, 20 feet above sea level.
		Dock Yard Guard	A quarter of a mile south of the preceding, and 20 feet above sea level.
		Ordnance Guard	Three-quarters of a mile south of the preceding, 20 feet above sea level.
		Main Guard	In centre of town, at Queen's Wharf, on Harbour, 15 feet above sea level. *At the end of the year a building opposite the preceding was taken into occupation.*
		General's Guard	Near General's Quarters, about 90 feet above sea level.
		Grand Battery Guard	Near entrance to Lumber Yard.
NEW BRUNSWICK.	St. John's.	New Barracks	Facing the Bay of Fundy, with a southern aspect, elevated about 90 feet above sea level, and built upon a clayey soil.
		Old Barracks	
		Guard Room	
		Cells	
		Hospital	Nearer the sea and about 20 feet above high water level
	Fredericton.	Stone Barracks	On the south bank of the River St. John, 30 feet above the river.
		Guard Room	
		Cells	Behind Guard Room, in centre of Barrack Compound.
		Park Barracks	In centre of the town of Fredericton, about 30 feet above river level.
		Guard Room	
		Strong Room	
		Hospital	In a separate compound, adjoining Stone Barracks.
ST. JOHN'S, NEWFOUNDLAND.		Fort Townshend	On the summit of hill or ridge upon which the town of St. John's is built, rising gradually from the harbour, about 150 feet above sea level
		Guard Room	
		Cells	
		Fort William	About 106 feet above sea level, commanding a view of the entrance of the harbour, and sheltered from weather.
		Guard Room	
		Cells	
		Stone Barracks	300 feet above the sea, greatly exposed to wind, and 1½ mile from the town.
		Signal Hill Guard Room	On summit of Signal Hill, 520 feet above sea level.
		Strong Room	On summit of Signal Hill, 520 feet above sea level.
		Provost Cells	On summit of Signal Hill, 520 feet above sea level.
		Hospital	At base of Signal Hill, 120 feet above sea level.

Distance from Sea, Lakes, or Rivers.	The Number of Men that can be Accommodated according to Regulation.	The Number in them.
About 650 yards from the Harbour of Halifax	104	156
	5	10
	2	2
600 yards from the harbour	208	462
	6	12
	2	...
	...	1
About 800 yards from harbour and 8 miles from the Atlantic Ocean	415	564
	8	10
	1	2
	4	2
	8	14
	3	1
	8	2
About 450 yards from the harbour.	554	773
	16	12
	9	...
	3	4
About 600 yards from harbour	63	42
600 yards from harbour	4	7
Adjoining the harbour	3	
	4	4
	4	11
	4	12
	5	10
		10
About 500 yards from harbour	4	9
About 100 yards from harbour	7	6
100 yards from sea	234	391
60 yards from sea	125	207
100 yards from sea	5	13
	6	1 in each
30 yards from sea	10	14
100 yards from river	105	105
80 yards from river	3	4
80 yards from river	5	1 in each
450 yards from river	107	129
	3	4
	1	Variable
100 yards from river	12	14
Three-quarters of a mile from the Harbour of St. John's	63	137
	5	8
	3	1 in each
About 900 yards from the harbour	24	71
	2	4
	Not in use.	...
About 1 mile from sea	80	39
About 1¼ mile from sea	4	4
About 1¼ mile from sea	7	6
About 1¼ mile from sea	2	...
About 1 mile from sea	22	7

		Stations and Barracks.	Structure.
HALIFAX, NOVA SCOTIA.		Royal Artillery Park	Wooden buildings, with basement, first floor, and attic
		Guard Room Cells	A wooden building detached from other buildings, and having the cells adjoining
		South Barracks	Basement of stone, first and second stories of wood
		Guard Room	Built of wood, opposite the orderly room
		Cells { Strong Room *Condemned Cell*	Strong room and cell opening into guard room
		Citadel (Fort George	A fortification, the rooms are bombproofs and casemates, built of stone and lined with brick
		Guard Room	
		Cells	
		Strong Room	
		Provost { Prison Solitary Cells Convict Room	
		Wellington Barracks	A brick building with ground floor, two stories, and attic
		Guard Room	Built of brick
		Strong Room Cells	Also built of brick
		Garrison Hospital	An old wooden building of three stories and a basement of stone; *sanitary condition greatly improved at commencement of year, and further alterations contemplated*
	Garrison Guards.	Garrison Hospital Guard	An isolated wooden building
		Magazine Guard	An isolated stone building
		Victualling Yard Guard	An isolated wooden building
		Dock Yard Guard	A wooden building, continuous with store sheds, &c.
		Ordnance Guard	A room in a stone building for stores
		Main Guard	A small building, adjoining the fish market, *now given up, being objectionable.* *A wooden building altered for a guard room*
		General's Guard	An isolated building near General's Quarters
		Grand Battery Guard	An isolated wooden building
NEW BRUNSWICK.	ST. JOHN'S.	New Barracks	A wooden building upon stone foundation
		Old Barracks	A wooden building upon stone foundation
		Guard Room	A wooden house
		Cells	Also of wood adjoining guard room
		Hospital	A stone foundation and two stories of wood
	FREDERICTON.	Stone Barracks	Built of stone; the basement forms twelve casemates
		Guard Room	A stone building, in centre of barrack square
		Cells	Of stone, behind guard room
		Park Barracks	A wooden building of two stories, and stone foundation
		Guard Room	Built of wood
		Strong Room	Built of wood
		Hospital	A stone building of basement and two stories
ST. JOHN'S, NEWFOUNDLAND.		Fort Townshend	An old wooden building of two stories and an attic
		Guard Room	Built of wood
		Cells	Built of wood, adjoining guard room
		Fort William	An old wooden building of two stories
		Guard Room	A room in a stone building (officers' quarters)
		Cells	Behind guard room in stone building
		Stone Barracks	Built of stone, and two stories high
		Signal Hill Guard Room	An isolated building of wood
		Strong Room	*A wooden building erected in April,* 1862, *adjoining old wooden barracks*
		Provost Cells	In a stone building now abandoned
		Hospital	A new brick building of two stories

Drainage.	Means, and sufficiency or otherwise of Means, for Ventilation.
Both superficial and underground, and may be considered as sufficient	Opposite windows, doors, and chimneys, together with that afforded by construction of the building, being old and of wood; *also ventilators in windows*
Both superficial and underground, and sufficient in each building	Opposite windows, doors, and fireplaces, together with that afforded by the construction of the buildings, being old and of wood
The superficial and underground drainage is sufficient, except at times when an unusual quantity of rain or snow has fallen	Portholes at one end of each room, and a door and window at the other (excepting 3 in the demi-bastion), 9 others have fanlights, in addition, and all have chimneys
	A window and grating over door, an air shaft runs through passage, communicating with each cell
The drainage forms a complete system of superficial and underground drains	Doors, fireplaces, and opposite windows; those at one end opening upon corridor, at the other externally
Lately improved. Still great dampness on ground flat	Three windows in many wards, 2 doors, and stoves
Superficial only	Sufficient for the climate, being of wood, not air tight
	Two windows, a door, and chimney; sufficient
The proximity to the sea renders the drainage sufficient	Sufficient for the climate, being of wood, not air tight
	Sufficient for the climate, being of wood, not air-tight
	Windows, door, and fireplace
	Sufficient for climate, being of wood
	Ventilators in walls and an air shaft in ceiling; sufficient
	Sufficient for climate, being of wood, not air-tight
	Sufficient for climate, being of wood, not air-tight
Has a complete system of drainage	Opposite windows and doors in each room
Also a complete system of drainage	Opposite windows and door in each room
Objectionable superficial drain; has been again represented, and will be remedied as soon as possible	Windows, door, and stove; sufficient
	Small windows and door opening to passage
Provided with superficial and deep drains	Sufficient; windows and door to each ward
Superficial only, but apparently sufficient, being near the river and upon a sandy soil	Opposite windows, a door and open fire-place in each
	Two windows and a door
	A small window externally, and door and grating to passage
Superficial only; an underground sewer is much required	Being of wood, not air-tight, the windows and door are sufficient for ventilation in this climate
Superficial only; ground slopes towards river	Two or three windows and a door to each ward
Superficial, and also underground drainage, and sufficient	These buildings being old and of wood, and not air-tight, are sufficiently ventilated for the climate with the windows (which are in most rooms opposite), and a door
Both superficial and underground drainage, and sufficient	Same as the preceding Being in a stone building, the door and window is hardly sufficient
	Also a stone building, a large window to each end of passage
Superficial only, but sufficient from situation	Two windows in each room, and a door and fan-light opposite
	Being of wood, not air-tight, the door and windows are sufficient
	The grate and two windows are sufficient
	A door and fan-light in each communicate with spacious passage
Superficial only, as afforded by the nature of the ground	Two windows in each ward, and door opposite opening to corridor; *also ventilators in the walls opening into the corridor*

		Stations and Barracks.	No. of Rooms or Wards, as per R. E. Return.	Average Monthly Cubic Space per Man.	State of Cleanliness.	Means of Lighting and Warming.
HALIFAX, NOVA SCOTIA.		Royal Artillery Park	17	322	Satisfactory generally throughout the Command.	Stoves or fire-places for warming, and candles for light
		Guard Room	1	315		
		Cells	5	555		
		South Barracks	35	322		Stoves for warming, and candles for light; oil-lamps in passages
		Guard Room	1	330		
		Cells, Strong Room ...	1	Variable		
		Cells, *Condemned Cell*	1	550		
		Citadel (Fort George)	48	450		Stoves for warming, candles for light, and oil-lamps in passages
		Guard Room	1	475		
		Cells	2	475		
		Strong Room	1	Variable		
		Provost, Prison ...	2	343		
		Provost, Solitary Cells	6	351 in each		
		Provost, Convict Room	1	1,325		
		Wellington Barracks	51	577		Fire-places in rooms, stoves in passages, candles for light, and oil-lamps in passages
		Guard Room	1	745		
		Strong Room	1	Variable		
		Cells	3	639		
		Garrison Hospital	11	1,788		Stoves, candles, and oil-lamps
	Garrison Guards.	Garrison Hospital Guard ...	1	381		A stove in each, and candles for lighting
		Magazine Guard	1	453		
		Victualling Yard Guard	1	600		
		Dock Yard Guard	1	226		
		Ordnance Guard	1	204		
		Main Guard	1 1	313 347		
		General's Guard	1	274		
		Grand Battery Guard	1	712		
NEW BRUNSWICK.	ST. JOHN'S.	New Barracks	27	356		Stoves for warming in rooms and passages; oil-lamps and candles for lighting
		Old Barracks	15	363		
		Guard Room	1	230		
		Cells	6	651		
		Hospital	4	830		
	FREDERICTON.	Stone Barracks	12	600		Open fire-places for burning wood in each room, a stove in each passage; also an oil-lamp for lighting, and candles
		Guard Room	1	434		
		Cells	5	723		
		Park Barracks	12	497		
		Guard Room	1	434		
		Strong Room	1	...		
		Hospital	4	1,028		
ST. JOHN'S, NEWFOUNDLAND.		Fort Townshend	10	341		Fire-places in each room and a stove in each passage; also an oil-lamp for lighting, and candles
		Guard Room	1	398		
		Cells	3	823		
		Fort William	7	346		
		Guard Room	1	343		
		Cells	4	...		
		Stone Barracks	10	399		Fire-places in rooms, and a stove in each passage, also an oil-lamp and candles
		Signal Hill Guard Room ...	1	720		
		Strong Room	1	774		
		Provost Cells	2	...		
		Hospital	4	1,787		

Nature and Amount of Fuel.	Condition of Baths and Lavatories; if sufficient for Cleanliness.	Bathing Parades, how often a Week.	Kitchen and Cooking Utensils, if sufficient for a Variety of Cooking.
Three rations of coal per diem to each room or ward in winter, and 5 in mid-winter; 4 rations in winter and 6 in mid-winter daily to each passage stove; and, in the kitchens, 1 ration to every 7 men daily throughout the year.	*Bath about to be erected; pump-house has been partially altered as an ablution room, but improvement is much required, and has been recommended*	None. *Locality not safe for bathing parades.*	A sufficiency of boilers are provided; also an oven, *now defective, but about to be altered*
	There is a good lavatory, with water laid on, but no bath		Both boilers and ovens provided, which afford sufficient means of cooking
	A casemate, with water laid on, is used as a lavatory; there is no bath at present		Sufficient for roasting, baking, and boiling
	Two well-arranged lavatories, but no bath		Ample means for roasting, baking, and boiling
	Bath room improved, but low and damp		Every means for a variety of cooking
	None		Means of boiling food only provided
	Good ablution room with baths, erected during the year		Means for boiling and baking provided
	None		Every means for a variety of cooking
Three rations of wood daily in winter, and 5 in mid-winter to each room; 4 and 6 rations to each passage stove, and 9 rations to each kitchen.	*Lavatory erected in July* 1862	A few bathing parades were held during summer, but discontinued on account of the dangerous nature of the river.	Sufficient for a variety of cooking
	An ordnance store fitted as lavatory in July 1862		Means for boiling only
	Lavatory erected in July, 1862		
Nature and amount of fuel, same as at Halifax, Nova Scotia.	None	None	
	A new ablution room, but no water laid on		
	None		Ovens have been erected in men's kitchens
			Every means for a variety of cooking

		Stations and Barracks.		The Amount and Sufficiency of Accommodation for Married Soldiers, and the State of their Quarters.
HALIFAX, NOVA SCOTIA.		Royal Artillery Park		Each soldier's family accommodated in barracks has a separate room, but there are no married quarters
		Guard Room		
		Cells		
		South Barracks		No special quarters for married soldiers. Twelve rooms (barracks) occupied by families of married soldiers
		Guard Room		
		Cells	Strong Room	
			Condemned Cell	
		Citadel (Fort George)		No rooms appropriated as married quarters
		Guard Room		
		Cells		
		Strong Room		
		Provost	Prison	
			Solitary Cells	
			Convict Room	
		Wellington Barracks		Thirteen rooms appropriated as married quarters in attic
		Guard Room		
		Strong Room		
		Cells		
		Garrison Hospital		None
	Garrison Guards.	Garrison Hospital Guard		
		Magazine Guard		
		Victualling Yard Guard		
		Dock Yard Guard		
		Ordnance Guard		
		Main Guard		
		General's Guard		
		Grand Battery Guard		
NEW BRUNSWICK.	St. John's.	New Barracks		None specially appropriated
		Old Barracks		
		Guard Room		
		Cells		
		Hospital		None
	Fredericton.	Stone Barracks		None
		Guard Room		
		Cells		
		Park Barracks		None
		Guard Room		
		Strong Room		
		Hospital		None
ST. JOHN'S, NEWFOUNDLAND.		Fort Townshend		No married quarters, but as much room as possible given to married men
		Guard Room		
		Cells		
		Fort William		No married quarters
		Guard Room		
		Cells		
		Stone Barracks		
		Signal Hill Guard Room		
		Strong Room		
		Provost Cells		
		Hospitals		

Sanitary State of Latrines, whether flushed or emptied by hand.	Sanitary State of Urinals.	Sanitary State of Ash-pits, &c.	Nature and Composition of Rations; whether sufficiently varied; and whether Rations include Tea, Coffee, &c.
Provided with soil-pit only, and emptied by hand	Constructed of wood, and faulty; but kept as clean as practicable	Emptied when found necessary	1 lb. of good beef, and 1 lb. of bread of good quality, daily, forms the Government ration, at a charge of 3½*d.* per man; and, for an additional charge of 3½*d.* in the line regiments, and 5½*d.* in the Artillery, each man is provided with extra bread, potatoes, and a proportion of vegetables, groceries, and milk.
Provided with soil-pits only, and emptied by hand	Kept in as clean a condition as practicable		
Flushed by manual labour; the engineer works having been completed	Kept in as good order as practicable, being constructed of wood, and not flushed with water		
Provided with means of flushing			
Provided with means of flushing			
Soil-pits only			
Soil-pit, near the sea			
Built over the sea-water			
Built over the sea-water			
Soil-pit only, near sea			
Built over the sea-water			
Soil-pit only			
Provided with soil-pits only and emptied by hand.	Good		
	None		
	Kept sufficiently clean		
	Good		
A sewer flushed by superficial drainage	One kept tolerably pure with lime		1 lb. of beef on six days, and 1 lb. of salt pork on the seventh, with 1 lb. of bread daily, forms the Government ration at 3½*d.* per man. And for an additional 3½*d.*, each man has an extra ½ lb. of bread, 1½ lb. of potatoes, with other vegetables, and peas with the pork; also tea, coffee, &c.
Provided with soil-pits only, and emptied by hand			

Stations and Barracks.			Nature and Qualities of Fruits and Vegetables obtainable.	The Spirits, &c., used by the Troops, and effect upon Health.	The Clothing, if sufficient, and adapted to the Climate.	Nature of Bedding, and whether sufficient.
HALIFAX, NOVA SCOTIA.		Royal Artillery Park	The quantities and qualities of fruits obtainable throughout the Provinces in the Nova Scotia Command consist chiefly of apples, dried fruits, currants, gooseberries, plums, and cherries in their season: also small wild fruit, such as strawberries, raspberries, brambleberries, and others not, however, much used by the Troops. The vegetables obtainable are abundant, and consist chiefly of potatoes, turnips, carrots, cabbages, and such other garden vegetables of England.	Throughout the Provinces in this Command, there is a great facility afforded to the Troops of getting an inferior description of spirit called "Rum," smuggled chiefly from the United States, and sold by innumerable small spirit shops, and is no doubt injurious to the health of the Troops, the majority of whom indulge largely owing to cheapness of liquor	clothing throughout seems sufficient and suited to the climate. The introduction of india-rubber long boots at Halifax for men on guard, instead of the long leather ones in use in winter, seems advisable, at least on those stations near the sea where thaws are frequent. The experiment was tried during the winter of 1860-61, but failed, owing to the men not taking proper care of their boots	The bedding consists of a straw mattress and pillow, a pair of sheets, two blankets and a rug, and three blankets in winter; and this is quite sufficient. At hospital, each bed is supplied with two sheets, two blankets, a rug, and a hair mattress and pillow.
		Guard Room				
		Cells				
		South Barracks				
		Guard Room				
		Cells: Strong Room				
		Cells: *Condemned Cell*				
		Citadel (Fort George)				
		Guard Room				
		Cells				
		Strong Room				
		Provost: Prison				
		Provost: Solitary Cells				
		Provost: Convict Room				
		Wellington Barracks				
		Guard Room				
		Strong Room				
		Cells				
		Garrison Hospital				
	Garrison Guards.	Garrison Hospital Guard				
		Magazine Guard				
		Victualling Yard Guard				
		Dock Yard Guard				
		Ordnance Guard				
		Main Guard				
		General's Guard				
		Grand Battery Guard				
NEW BRUNSWICK.	ST. JOHN'S.	New Barracks				
		Old Barracks				
		Guard Room				
		Cells				
		Hospital				
	FREDERICTON.	Stone Barracks				
		Guard Room				
		Cells				
		Park Barracks				
		Guard Room				
		Strong Room				
		Hospital				
ST. JOHN'S, NEWFOUNDLAND.		Fort Townshend				
		Guard Room				
		Cells				
		Fort William				
		Guard Room				
		Cells				
		Stone Barracks				
		Signal Hill Guard Room				
		Strong Room				
		Provost Cells				
		Hospital				

Nature and Amount of Duty of Troops, and Influence upon Health.	Proportion of Nights in Bed.	Gymnastics, Amusements, and Recreations in use, and if conducive to Health.	Sanitary condition of Canteens, &c.
The ordinary garrison and regimental duties are fatigues, with drills and target practice during the summer months and autumn only, to none of which can any injurious effect be attributed, excepting the night duties upon guard, and these are not more severe than elsewhere	Seven	There is no gymnasium in this garrison, and the chief exercises are cricket and football in the summer, and marching out for four or five miles twice a-week in winter. No lectures have been delivered this winter by the officers of the garrison. The regimental libraries are well supplied with books, but a more varied means of amusement for the men is very much required. *Steps are being taken to establish a Soldiers' Club, which will soon be opened in the building lately occupied as garrison offices*	The canteen small and confined; the liquors and other articles sold are of good quality
	Seven		*No canteen*
	Seven		A casemate, dark and insufficiently ventilated, is used; the liquors, &c., sold, are of good quality
	Seven		A well arranged and ventilated room, and the malt liquor, &c., good
	Four	Cricket and hand-ball in the summer, and snow-shoeing in the winter, with the detachment library. A *Soldiers' Institute has been built in the barrack inclosure*	No canteen
	Ten		
	Six	Cricket, football, and quoits in summer, and snow shoeing in winter; besides, theatricals and the library afford some amusement	
	Seven		
	Five	Cricket and hand-ball in the summer, and the regimental library, form the only means of recreation or amusement. A Soldiers' Institute here also might frequently keep men from the numerous public-houses of the town of St. John's	No canteen

		Stations and Barracks.	Amount of Intemperance and Crime, and Disease directly or indirectly traceable to its effects	State of Vaccination among the Troops.
HALIFAX, NOVA SCOTIA.		Royal Artillery Park	Intemperance very general amongst the Troops at this Station, and consequent crime and punishment; and a very large number of cases admitted into hospital are directly or indirectly attributable to this vice.	All the men, women, and children belonging to the Troops in this Command (except very young infants) bear marks either of small-pox or vaccination.
		Guard Room		
		Cells		
		South Barracks		
		Guard Room		
		Cells Strong Room *Condemned Cell*		
		Citadel (Fort George)		
		Guard Room		
		Cells		
		Strong Room		
		Provost Prison Solitary Cells Convict Room		
		Wellington Barracks		
		Guard Room		
		Strong Room		
		Cells		
		Garrison Hospital		
	Garrison Guards.	Garrison Hospital Guard		
		Magazine Guard		
		Victualling Yard Guard		
		Dock Yard Guard		
		Ordnance Guard		
		Main Guard		
		General's Guard		
		Grand Battery Guard		
NEW BRUNSWICK.	ST. JOHN'S.	New Barracks		
		Old Barracks		
		Guard Room		
		Cells		
		Hospital		
	FREDERICTON.	Stone Barracks		
		Guard Room		
		Cells		
		Park Barracks		
		Guard Room		
		Strong Room		
		Hospital		
ST. JOHN'S, NEWFOUNDLAND.		Fort Townshend		
		Guard Room		
		Cells		
		Fort William		
		Guard Room		
		Cells		
		Stone Barracks		
		Signal Hill Guard Room		
		Strong Room		
		Provost Cells		
		Hospital		

Buildings still in use as Temporary Barracks and Hospitals of those occupied by the Expeditionary Force on their way to Canada in 1862.

HALIFAX	Railway Barracks (Richmond). City Hospital.
ST. JOHN, NEW BRUNSWICK ..	Custom House. Sheffield Street Hospital.
FREDERICTON	Temporary Barrack, No. 1. Ditto ditto No. 2.

These buildings answer their purpose as regards hygienic requirements and the comfort of the men. The City Hospital, Halifax, will be given up on 1st April, 1863.

A REPORT ON THE TRANSIT OF THE TROOPS FROM NOVA SCOTIA TO CANADA, WITH A DESCRIPTION OF THE BARRACK ACCOMMODATION, &c., IN THE LATTER COMMAND.

By DR. MUIR, C.B., Inspector General of Hospitals.

That part of our possessions in British North America called Canada, lies between 41° 30′ and 52°, north latitude, and 63° 30′ and 90°, west longitude. It is computed to have an extent from north to south of 1,300, and from east to west of 700 miles, with a superficial area of 355,000 square miles. Its general physical characteristics are large collections of fresh water (lakes and rivers), intersected by extensive tracts of uncleared land; winters of extreme length and severity, and summers almost tropical in character, marked by great and sudden alternations of temperature.

Experience, however, has proved that its climate is well suited to European constitutions, and conducive to longevity.

As might have been anticipated from its extent, Canada presents considerable variety of geological formation, but its general structure exhibits a granite country, accompanied by calcareous rock of soft texture, and in horizontal strata.

According to Lyell and Logan, there is a deficiency of the whole of the secondary or mesoigoic series, while in the tertiary, the recent post pliocene and newer pliocene are to be found.

In the primary series are the carboniferous limestone, upper and lower Devonian, beneath which other and more ancient stratified rocks exist.

The mineral wealth is vast, comprising iron, copper, gold, zinc, lead, &c., and quite recently copper and other mines have been discovered of great extent and richness in the Eastern Counties, which bid fair to make that part of the country the future home of thousands, and the seat of large and influential cities.

Amongst other materials of great economic value, of also recent discovery, may be mentioned petroleum, or coal-oil, which is already an article of large export as well as home consumption. For lighting purposes, this oil is coming into general use in the colony, and even threatens to supersede coal in the manufacture of gas, generation of steam, &c. In its purified state, it sells from 1*s*. 3*d*. to 2*s*. a gallon, and has recently been introduced into the hospitals in the Command, where it has given general satisfaction.

As was predicted by Sir Wm. Logan, coal has not yet been discovered—at least, in working quantities—the supply being furnished from the United States.

Of the natural history of the country, in addition to the ordinary domestic animals met with in England, a great many are valuable on account of their furs; but these, as well as the vegetable productions, are too numerous and diversified for detail.

The annual mean temperature is set down at 40° Fah., the lowest, 36° Fah. in February, and highest, 97° Fah in July. The largest rain-fall takes place in spring and autumn; the prevailing winds are westerly and south-westerly.

From the great proportion of the troops being quartered in the Eastern Province, it may not be out of place to consider a little more in detail its physical characteristics.

The year may be divided into two seasons—summer and winter; for spring and autumn are too short and uncertain to entitle them to be considered as distinct seasons.

The winter generally sets in in November, and from that time until May the ground remains covered with snow. The cold is often intense, but unless a strong wind is blowing from the north or north-east, its effects on the feelings are not so acute as might be expected from so low a range of temperature.

The normal weather is a calm, dry, and clear atmosphere, often accompanied with a bright sunshine, which is most exhilirating and enjoyable. This is by far the healthiest season of the year, and preferred by all old residents to the summer, with all its verdant attractions. In the midst of the winter, as will occasionally take place from the wind changing to the southward, the usual clear sky becomes overcast, the air damp, and even rain sometimes falls. This, however, does not last above a few days, and generally takes place in January.

The summer generally sets in about the middle of May, and is frequently ushered in by rain. The transition from winter is very sudden, the thermometer often rising to 80° during the day, before the ground is clear of its covering of snow, the nights, however, retaining their winter coldness. At this period a good deal of sickness may be expected from the sudden vicissitude of temperature. The heat in the dog days is often most oppressive, adn very fatal to young children—and what is called the "Indian summer" occurs in October or November, is of brief duration, and characterized by soft, pleasant weather, but is not of certain occurrence.

In the Upper Province, the winters, as a rule, are much shorter and milder, and the extremes of temperature less marked.

The troops in the Command are distributed mainly along the line of the St. Lawrence, or the banks of Lake Ontario, out of which it flows.

In the Lower Province, Montreal and Quebec are the chief military stations. In the Upper Province, Kingston, Toronto, Hamilton, and London, contain garrisons more or less strong; while on the line of the Richelieu and the western frontier are the advanced posts of Chambly, St. John's, Isle aux Noix, Niagara, &c., held chiefly by detachments of the Royal Canadian Rifles. Each of these stations and posts is so fully described in the Reports accompanying this Return, that it seems supererogatory to do more than refer to them here.

During the year ending 31 December, 1862, the garrison of Canada averaged about 10,760 men, of which about 8,300 were Infantry, 2,000 Artillery and Engineers, and 290 Military Train. There has been no regular cavalry employed. A small contingent of the Army Hospital Corps and Commissariat Staff Corps go to complete the total aggregate.

Prior to the "Trent" affair, the garrison had, during a quarter of a century of peace, gradually dwindled down to an average strength of 3,000 men, and it was only between the close of 1861 and the spring of 1862 that it was reinforced to the extent above stated.

The following Table will show how the force is distributed:—

Stations.	Royal Artillery.	Royal Engineers.	Military Train.	Line.
Montreal and Vicinity ..	604	113	164	3,139
Quebec	329	..	..	1,561
Toronto	290	..	69	746
London	192	117	68	941
Hamilton	198	..	..	795
Kingston	198	..	..	881
Detachments and Outposts	..	..	..	567

Of the health of this force, and the circumstances bearing on it—such as barrack accommodation, duty, diet, &c., during the period embraced in this Report, it is now my duty to speak; but before doing so, it seems incumbent upon me to say a few words on the overland route taken by a large portion of it in midwinter across the snowy plains of Nova Scotia and New Brunswick, as it was an operation of some peril, calling for great forethought and sanitary precaution, and in its results was eminently successful.

Overland Route, Halifax, N.S., to Canada.

I shall say nothing of the prompt and admirable way in which the regiments and batteries destined for service in Canada were equipped and embarked by the Home authorities, nor of the judicious care which presided over all the primary arrangements. The event proved that dear-bought experience was at length bearing fruit, and that our military organization was now equal to any strain that might be made upon it, however sudden and tense that strain might be. In the course of little more than a month, a force of over 7000 men was collected, shipped, and thrown upon the shores of this country in a state fit for taking the field, with staff and *matériel* complete, without a check or casualty of any kind.

It was the intention of the authorities that the several battalions and batteries comprising the force should proceed direct up the mouth of the St. Lawrence, and land at Bic, within easy distance of the terminus of the Grand Trunk Railway at Rivière du Loup, whence they should move on to Montreal; but the state of the weather and ice prevented more than one regiment (the 1st Battalion 16th Foot) performing this feat, and that not without risk and difficulty.

It may be questioned, however, whether this could not have been compassed by many of them, provided the lighthouses had been kept lit, and propellers instead of paddle steamers had been used. As it was, the great bulk of the force made for the ports of Halifax or St. John, where the men landed, and whence they were forwarded overland to Canada.

The road from St. John, New Brunswick, to Rivière du Loup lay for a great part of its extent along the right bank of the River St. John, which it crossed a little above the Grand Falls, passing afterwards into the Madawaska Territory of Lower Canada, the distance to be traversed amounting to 316 miles, and this was divided into 10 daily stages, averaging 30 miles each.

These were Petersville, Fredricton, Tilleys, Woodstock, Florenceville, Tobique, Grand Falls, Little Falls, and Rivière du Loup. Since 1837, when troops were passed over this route under nearly similar circumstances the intervening country had been much more cleared and settled, sothe difficulty of finding cover was not so great as many had anticipated. The original intention of erecting shanties or log huts at different points along the line was abandoned when it was ascertained that the men could be comfortably billetted *en route*, these huts being confined to two midday halting places—viz., Petersville and St. Francis.

The winter clothing which had been provided at home for the troops consisted of a sealskin cap with ear lappets, a woollen comforter, two wool jersies, two pairs wool drawers, chamois leather vest, two pairs long woollen stockings, sealskin mitts, and a pair of jackboots per man, while here a pair of blankets and a pair of mocassins were added, the sleighs being provided with two or more buffalo robes each.

A quarter of a pound of meat was added to the ordinary rations of the country, and half a gill of rum included—the latter not from any belief in its necessity, or even suitableness, but because of its being considered by the soldier as his *summum bonum*, the prospect of it, it was considered, would stimulate and encourage him, while its small quantity could exercise no prejudicial effect on his health.

The sleighs, which were drawn by two horses, contained eight men each, placed *vis-à-vis*, the bottoms being filled with hay or straw. The men were not allowed to loiter or lounge about before getting into them, but passed from their warm rooms to their seats, charged with as large an amount of caloric as they were capable of imbibing. During the journey they were encouraged to get out and run alongside in turns, in order to promote circulation and maintain their animal heat.

The daily detail of work may be described as follows :—The men generally started at from 7 to 9 A.M. (the hour varying with the distance to be got over) and reached their halting place for the night at from 3 to 8—5 o'clock being the average hour. They had a hot meal before starting, another with coffee or tea at the midday resting-place, anda hot substantial supper awaited their arrival at their billets for the night, prepared by stationary cooks, or cooks sent on in advance. The rum was served out either at the midday or supper meal. They moved in detachments of 150, with a proportionate number of officers.

The medical arrangements were as follows :—Small hospital establishments were formed at each of the nightly halting-places, with one or more Medical Officers attached, and suitable *matériel* provided; in addition, each detachment was accompanied by a Medical Officer, who carried a small supply of medicines and medical comforts, and in the few instances where no Medical Officer was available, these simple articles were entrusted to the Officer commanding the Detachment.

After the 20th January, when a large reinforcement of Medical Officers arrived, an Assistant-Surgeon was placed at each of the intermediate posts, in order to afford any assistance that might be required at these halting-places. In ordinary circumstances of war, this provision of medical aid would, of course, be superfluous and impracticable; but as these Medical Officers were *en route* to Canada, and unemployed, it wasjudged right to turn their services, to account *en passant*.

The road through New Brunswick was very bad; that through Lower Canada was in much better order—the Government of the Lower Province having provided snow ploughs and rollers to keep it open, and make the trajet of the troops less difficult.

The weather during the time the troops were moving—that is, from 6th January to 10th March—must be considered as having been, on the whole unusually mild. Several Medical Officers note the thermometer as having touched the low figure of —25° Fah., but as there was little wind at these times, the effects of so intense a cold were comparatively little felt.

Several snow-storms occurred, but caused no inconvenience beyond a short delay.

The command of telegraphic communication along the entire line was of unspeakable advantage—as hourly reports came back to head quarters from every detachment as to its progress, wants, &c., by which the movements of succeeding detachments were regulated.

The health of the men during the transit was uncommonly good, more so than if they had been in regular barracks, and for ordinary duties in Canada.

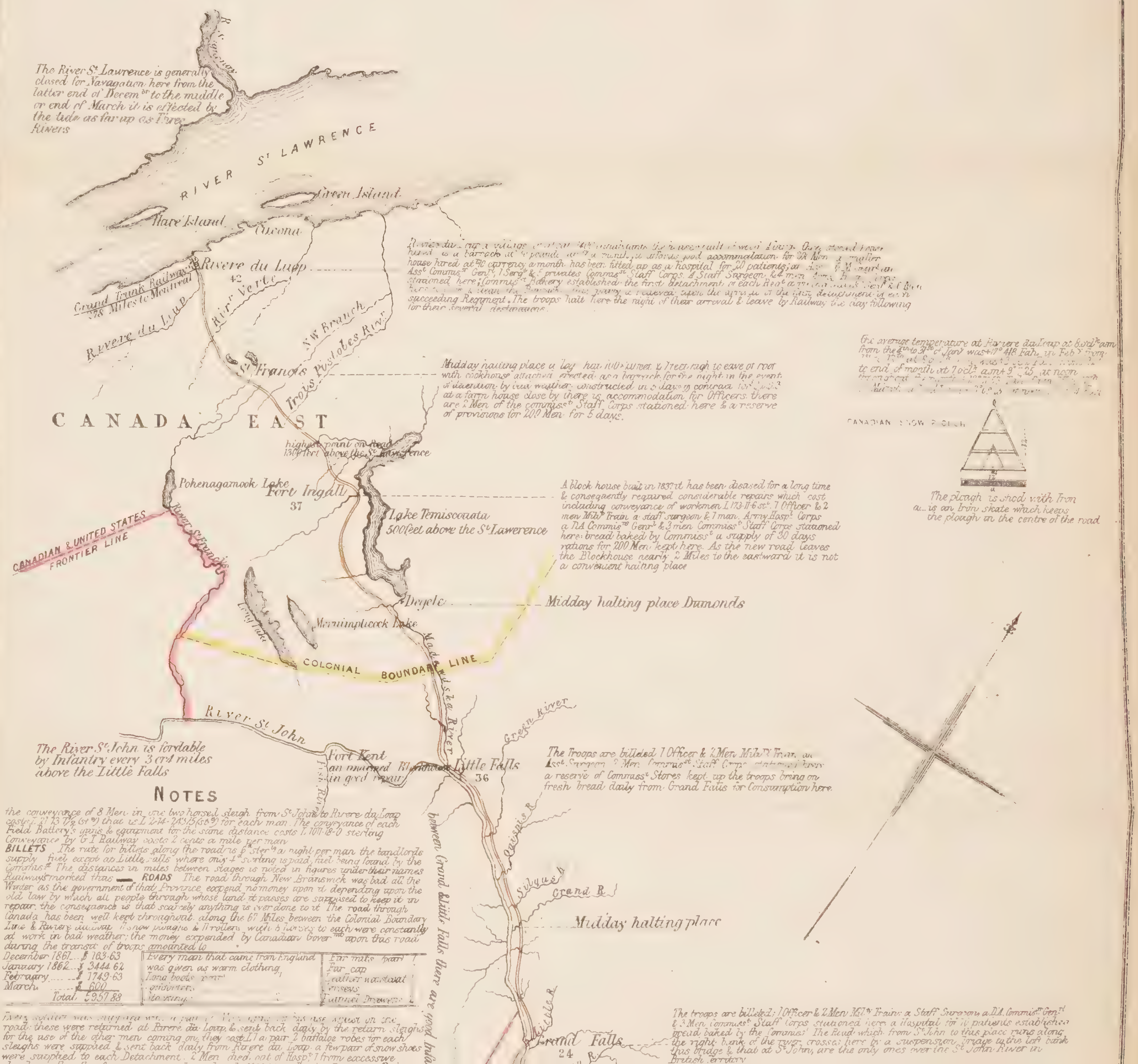
Of the 6,818 men and officers that passed over the line, not more than 70 in all claimed admittance into the receiving hospitals *en route*, nearly all of whom eventually returned to duty with their regiments. Excluding two fatal cases directly attributable to excess in drinking—one, at St. John, and one, at Fort Ingall, only two men died, viz., one (63rd at Petersville), from pneumonia, through hard drinking, and one man (Military Train), whose disease is returned as entiritis.

TAKEN BY TROOPS PROCEEDING FROM

Route

St. JOHN NEW BRUNSWICK TO CANADA.

— 1862 —



The River St. Lawrence is generally closed for Navagation here from the latter end of Decemr. to the middle or end of March it is effected by the tide as far up as Three Rivers

Rivere du Loup a village of about 1400 inhabitants [illegible] hired as a barrack at [illegible] pounds [illegible] a month, it affords good accommodation for 300 Men a smaller house hired at £10 currency a month has been fitted up as a hospital for 20 patients; an [illegible] Asst. Commiss. Genl., 1 Sergt. & 5 privates Commisst. Staff Corps. A Staff Surgeon & 4 men Army Hosp. Corps stationed here; Commisst. Bakery established; the first detachment of each Regt. [illegible] here [illegible] upon the arrival of the first detachment of each succeeding Regiment. The troops halt here the night of their arrival & leave by Railway the day following for their several destinations.

Midday halting place a log hut 100 × 20 feet & 7 feet high to eave of roof with cookhouse attached erected as a barrack for the night in the event of detention by bad weather constructed in 5 days by contract for [illegible] at a farm house close by there is accommodation for Officers. there are 2 Men of the Commisst. Staff Corps stationed here & a reserve of provisions for 200 Men for 5 days.

The average temperature at Rivere du Loup at 8 o'clk a.m. from the 4th to 31st of Jany. was +17° 418 Fah. in Feby. from [illegible] to end of month at 7 o'clk a.m. +9° 25 at noon [illegible] March [illegible]

The plough is shod with Iron
a.. is an Iron skate which keeps the plough in the centre of the road

A block house built in 1837 it has been disused for a long time & consequently required considerable repairs which cost including conveyance of workmen L 173·11·6 stg. 1 Officer & 2 men Milty. Train a staff surgeon & 1 man Army Hospl. Corps a DA Commisy. Genl. & 3 men Commisst. Staff Corps stationed here: bread baked by Commisst. a supply of 30 days rations for 200 Men kept here. As the new road leaves the Blockhouse nearly 2 Miles to the eastward it is not a convenient halting place

Midday halting place Dumonds

The River St. John is fordable by Infantry every 3 or 4 miles above the Little Falls

The Troops are billeted 1 Officer & 2 Men Milty. Train an Asst. Surgeon [illegible] Men Commisst. Staff Corps stationed here a reserve of Commisst. Stores kept up the troops bring on fresh bread daily from Grand Falls for Consumption here.

Midday halting place

NOTES

the conveyance of 8 Men in one two horsed sleigh from St. John to Rivere du Loup costs L 21·13·1½ (st.g) that is L 2·14·2 13/15 (stg) for each man. The conveyance of each Field Battery's guns & equipment for the same distance costs L 1011·18·0 sterling Conveyance by G T Railway costs 2 cents a mile per man

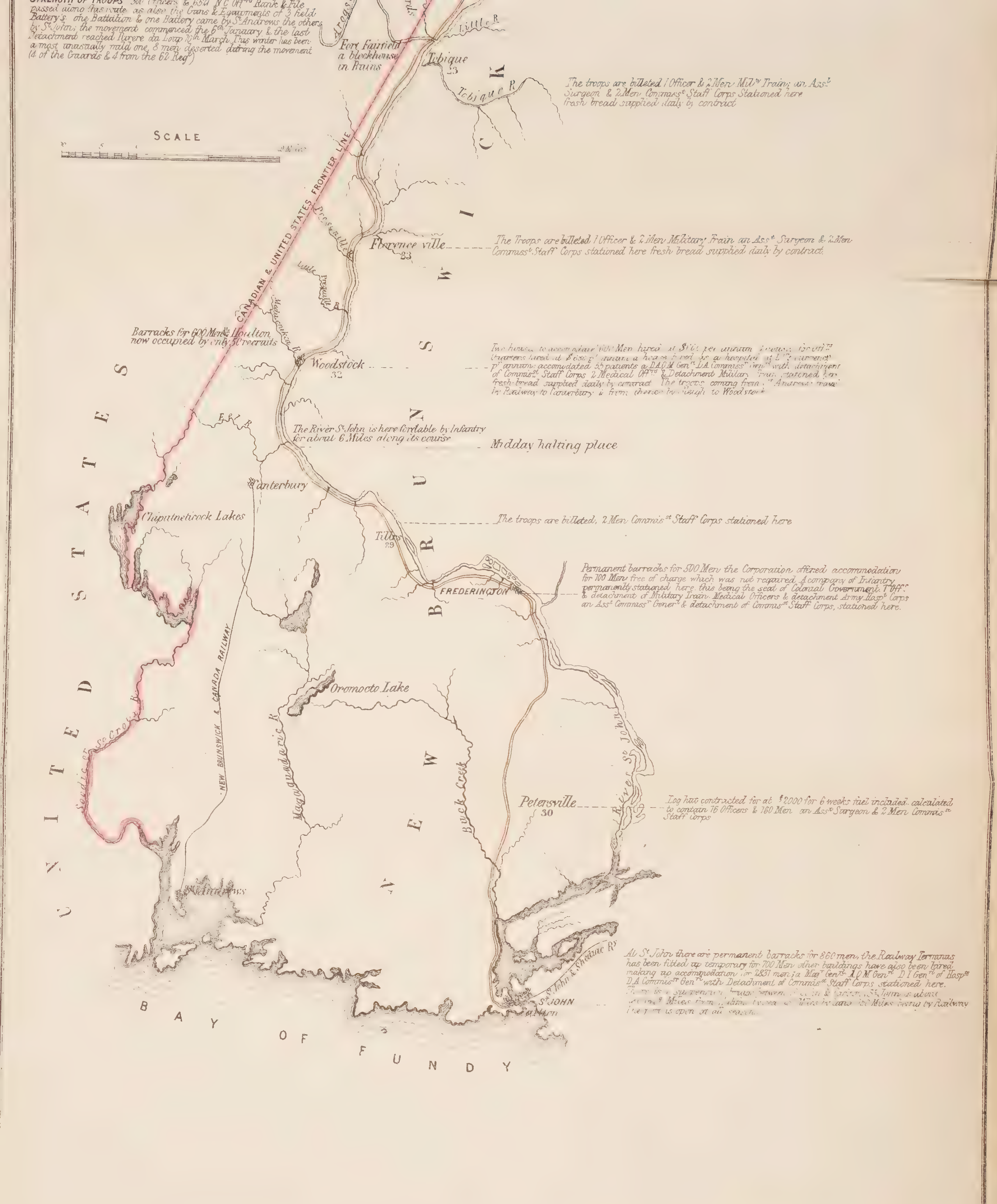
BILLETS The rate for billets along the road is 6d. sterg. a night per man the landlords supply fuel except at Little Falls where only 4d. sterling is paid, fuel being found by the Commisst. The distances in miles between stages is noted in figures under their names Railways marked thus ▬ **ROADS** The road through New Brunswick was bad all the Winter as the government of that Province expend no money upon it depending upon the old law by which all people through whose land it passes are supposed to keep it in repair. the consequence is that scarcely anything is ever done to it The road through Canada has been well kept throughout. along the 67 Miles between the Colonial Boundary Line & Rivere du Loup 11 snow ploughs & 11 rollers with 6 horses to each were constantly at work in bad weather; the money expended by Canadian Govermt. upon this road during the transit of troops amounted to

December 1861	$ 163·63
January 1862	$ 3444·62
February	$ 1749·63
March	$ 600
Total	5957·88

Every man that came from England was given as warm clothing	Fur mits pair 1
Long boots pair	Fur cap
Comforter	Leather waistcoat
Stocking	Jerseys
	Flannel Drawers 2

Every soldier was supplied with a pair of [illegible] for his use whilst on the road: these were returned at Rivere du Loup & sent back daily by the return sleighs for the use of the other men coming on: they cost L 1 a pair. 2 buffaloe robes for each sleighs were supplied & sent back daily from Rivere du Loup. a few pair of snow shoes were supplied to each Detachment. 2 Men died, out of Hospl. 1 from excessive

The troops are billeted; 1 Officer & 2 Men Milty. Train: a Staff Surgeon, a DA Commisy. Genl. & 3 Men Commisst. Staff Corps stationed here a Hospital for 10 patients established bread baked by the Commisst. The Road which from St. John to this place runs along the right bank of the river crosses here by a suspension bridge to the left bank this bridge & that at St. John, are the only ones over the St. John River in British territory


STRENGTH OF TROOPS 30[illegible] Officers & 65[illegible] N C Off^rs Rank & File passed along this route as also the Guns & Equipments of 3 field Battery's. one Battalion & one Battery came by S^t Andrews the others by S^t John; the movement commenced the 6^th January & the last Detachment reached Rivere du Loup 10^th March. This winter has been a most unusually mild one, 8 men deserted during the movement (4 of the Guards & 4 from the 62 Reg^t)
SCALE
Aroos
Little R.
Fort Fairfield a blockhouse in Ruins
Tobique 23
Tobique R.
The troops are billeted 1 Officer & 2 Men Mil^ty Train; an Ass^t Surgeon & 2 Men Commiss^t Staff Corps Stationed here fresh bread supplied daily by contract
CANADIAN & UNITED STATES FRONTIER LINE
Presquille
Florence ville 33
The Troops are billeted 1 Officer & 2 Men Military Train an Ass^t Surgeon & 2 Men Commiss^t Staff Corps stationed here fresh bread supplied daily by contract.
Little Presquille R.
Meduxnekeag R.
Barracks for 600 Men at Houlton now occupied by only 30 recruits
Woodstock 32
Two houses to accomodate 600 Men hired at $[illegible] per annum [illegible] for Off^rs Quarters hired at $[illegible] p^r annum a house hired as a hospital at [illegible] currency p^r annum: accomodated 55 patients a D.A.Q.M Gen^l D.A Commiss^t Gen^l with detachment of Commis^st Staff Corps 2 Medical Off^rs & Detachment Military Train stationed here fresh bread supplied daily by contract. The troops coming from S^t Andrews travel by Railway to Canterbury & from thence by sleigh to Woodstock
N E W B R U N S W I C K
U N I T E D S T A T E S
Eel R.
The River S^t John is here fordable by Infantry for about 6 Miles along its course
Midday halting place
Canterbury
Chiputneticook Lakes
The troops are billeted, 2 Men Commis^st Staff Corps stationed here
Tilley's 29
Permanent barracks for 500 Men the Corporation offered accommodation for 700 Men free of charge which was not required. A company of Infantry permanently stationed here this being the seat of Colonial Government. 1 Off^r & detachment of Military Train. Medical Officers & detachment Army Hosp^l Corps an Ass^t Commiss^y Gener^l & detachment of Commis^st Staff Corps, stationed here.
FREDERINGTON
Oromocto Lake
Magaguadavic R.
Buck Creek
NEW BRUNSWICK & CANADA RAILWAY
Scoodic or St Croix R.
River S^t John
Petersville 30
Log hut contracted for at $2000 for 6 weeks fuel included. calculated to contain 76 Officers & 760 Men an Ass^t Surgeon & 2 Men Commis^st Staff Corps
St Andrews
S^t John & Shediac R^y
S^t JOHN
At S^t John there are permanent barracks for 860 men, the Railway Terminus has been fitted up temporary for 700 Men other buildings have also been hired making up accommodation for 2831 men; a Maj^r Gen^l A Q M Gen^l D I Gen^l of Hosp^ls D.A Commis^st Gen^l with Detachment of Commis^st Staff Corps stationed here.
There is a suspension bridge between [illegible] & Carleton. S^t John is about [illegible] Miles from [illegible] [illegible] Miles by land [illegible] Miles by Railway the port is open at all seasons.
B A Y O F F U N D Y

Of the 11 cases of frost-bite which occurred, only one man was seriously injured (both hands requiring amputation); of the seven cases of pneumonia returned, all got well with exception of the fatal case already mentioned.

The other affections were trifling attacks of diarrhœa, to which men are liable everywhere, especially after drinking, to which not a few gave themselves up, when they had the opportunity.

From returns called for from regiments and batteries six months after the close of this military operation, the above seems to be the amount of sickness directly traceable to exposure on that occasion, and must be admitted to be very trifling. This happy result was doubtless due to the care and forethought of the military authorities (of which the Commissariat Department merits no small meed of praise), aided by the intelligent suggestions of the Sanitary Officer of the Force, of which a copy is appended.

For more detailed particulars than are compatible with the limits of this Report, I must refer to the excellent map and accompanying remarks of Assistant Quartermaster-General Colonel Wolsley, also appended.

With these preliminary observations, I now proceed to the more essential topics embraced in this Report, and as the barrack and hospital accommodation in this Command is one of the most important of these, I purpose considering it in detail, embodying in it the results of my periodical inspections made upon the spot.

In discussing this part of the Report, the simplest and most intelligible plan seems to be to arrange my remarks on barracks and hospitals under the head of the stations in which they are respectively situated, viz.:—

1st. Kingston.
2nd. Toronto.
3rd. Hamilton.
4th. London.
5th. Quebec.
6th. { Montreal,
Detachment and Outpost Barracks and Hospitals.

And lastly, disease, mortality, rations, clothing, duties, medical supplies, &c.

KINGSTON.

Kingston is garrisoned by a Regiment of the Line, a Battery of Artillery, and detachments of Royal Canadian Rifles.

The city itself is situated on the north shore of Lake Ontario, and on the west bank of the Cataraqui River, being thus surrounded on two sides by water. The ground on which it is built rises in a gentle ascent from the lake, thus affording excellent facilities for drainage. It has a good water supply from the lake, by public works erected for the purpose, but its system of sewerage is defective.

It contains about 20,000 inhabitants. Towards the east is a tract of low marshy land in connection with the Cataraqui River, which is supposed at certain seasons to be the source of intermittent fever, from which the troops located in the Tête du Pont Barracks in that neighbourhood suffered severely in 1847-8; but, on the whole, the town may be considered healthy.

The country around Kingston is well cleared, and is very fertile, and furnishes abundant supplies of vegetables and fruits, as well as animal food for the use of its inhabitants. The geological formation consists of blue lias, and limestone.

The barrack accommodation at Kingston consists of the Tête du Pont Barracks, Fort Henry, Park Barracks, and two small Martello Towers, all the property of the Government; while a block of buildings called "Fergusons," has been hired for the accommodation of the Detachment of Canadian Rifles.

The sick are accommodated in three hospitals: two (hired) in the city of Kingston, and one (Government), at Fort Henry.

Barracks.

The Tête du Pont Barracks, occupied by the Head Quarters, and six Companies of the 62nd Regiment, consists of five buildings of two stories each, three being of stone, and two of wood. They are built close to the lake (the city, on its north-eastern side), in shape of an irregular quadrangle, and elevated only a few feet above the level of the lake. They enclose an area of about an acre, which is used as a parade ground. They are not encroached upon by the houses of the town, but are open and exposed to free ventilation. Their regulated accommodation is set down at 442, which allows a cubic space per man of 600 feet (nearly), and has not been exceeded to any injurious extent.

They are pretty good of their kind, especially the more recent stone buildings, and well ventilated by means of doors, windows, and patent ventilators. In winter, they are adequately heated by stoves, each room having a fire-place and stove, but the latter only used.

The drainage is in a satisfactory state, one drain only excepted, which is being repaired. There is an ample supply of baths and lavatories for the use of the men, bathing parades in summer not being practicable.

The latrines and urinals being so placed as to project into the lake, all offensive matter is effectually removed by the current of the river. The ash-pits are of the antiquated pattern, and cleared by contract. Whitewashing the walls of the barrack rooms and other means of cleanliness are carefully attended to.

The guard room and cells are good and sufficient, the cubic space per man 589, and 558 feet in each respectively ; the kitchens are in detached buildings, supplied with boilers and ovens, so as to admit of variety of cooking, and air sufficient.

Here, as elsewhere, there is a want of out-door amusement for the men—a fives-court and cricket being the only means available.

One of the rooms in barracks is given up as a library for the use of the men of the regiment, and the canteen is well ventilated, and kept under proper surveillance.

Fort Henry.

Fort Henry is situated about a mile and a-half from Kingston, with which it is connected by a wooden bridge, spanning that part of the bay which lies between them.

It is built on a projecting tongue of land, 100 feet above the level of the Lake Ontario, and surrounded by a dry ditch. It is of the same construction as the Fort at the Citadel, Quebec, two storied and casemated. The men's quarters front and rear, the officers' on the flanks ; in ordinary circumstances it is calculated to afford accommodation to about 200 men, the upper casemates only being occupied, and the lower used as offices.

The men's quarters, on the second story, which are reached by several outer stone staircases, opening on a balcony, consist of 18 rooms, each marked off to contain 11 beds, all being of the same size, with arched roof, ventilated between loopholes communicating with the ditch and in front by means of windows, &c. They are each 35½ feet long, 18½ wide, and 10¾ high ; thus giving about 600 cubic feet per man to their inmates.

The ground floor is used as quarters for married men, cooking houses, canteen, commissariat, and other stores, and one of the rooms is fitted up as an ablution-room. The guard-room is casemated, and has cubic capacity of 2,800 feet, allowing nearly 500 cubic feet per man.

The cells have been condemned, and are never used.

The kitchen arrangements are good and sufficient. Ovens and cooking stoves have been recently added to the boilers formerly in use. The water supply, until lately, was good and abundant from tanks, but, in consequence of leakage into one of them from a sewage drain, has become insufficient, and requires to be carted from without the fort. Steps, however, are being taken to remedy this evil.

The officers' and men's privies are flushed by the surface and waste water collected in the fort, the main sewer passing through them into the lake Some imperfections in the machinery for flushing, having admitted of foul air passing from the main into the Barrack Square, have recently been corrected, and a trap beyond the circuit of the fort, so as to prevent the "back draughts" of foul air when the wind blows from a certain point of the compass, is further.

about to be carried out; in addition to these means, lime and other deodorizing agents are freely used.

In Fort Henry have been quartered, during the past year, a battery of Royal Artillery (6th Battery, 19th Brigade, recently arrived from England), and a detachment of 62nd Regiment.

This barrack, which is designed to accommodate a full battery of Artillery, is one of the best in the Command. It is built of stone, is two-storied with attics, in one continuous block. At each flank are quarters for the non-commissioned officers, while the centre portion is appropriated to the men's rooms; these are particularly well arranged as to comfort and efficient ventilation, the latter by cross windows, further assisted by ventilating openings over them.

This block forms one side of a large open square, dry, elevated, and exposed; gun sheds, &c., forming the remaining outline.

There is a good ablution-room on the ground floor, properly equipped for the use of the men.

The kitchen arrangements are good and sufficient, means of baking and roasting being provided in a detached house adjoining. The guard-room, latrines, and ash-pits are satisfactory.

This barrack has been in possession of a detachment of Royal Artillery and 62nd Regiment.

Ferguson's Buildings.

This barrack is a block of three brick houses (formerly stores) rented by the Government for the accommodation of the detachment of Royal Canadian Rifles; it is situated in the town of Kingston, about three-quarters of a mile from the water's edge, and 150 feet above its level. The situation is healthy, and the accommodation sufficient for the families who occupy it, the ventilation being by large windows and doors.

A cook and wash house, guard-room, and separate latrines for men and women have been provided in the back yard by the Royal Engineer Department. The water is furnished from the town main.

The drainage is defective, and cannot be remedied without large outlay, for which, and other reasons, it is proposed to give up the building when a fresh distribution of the garrison takes place.

Martello Tower, "Cedar Island."

The small Barracks of Cedar Island and Fort Henry Martello Tower, as well as the naval cottages in the old Dockyard, where the married families of the garrison are quartered, do not call for special notice. They are well suited for the purpose, and afford the necessary accommodation.

HOSPITALS.

Hospital—62nd Regiment.

The sick of the 62nd Regiment are accommodated in a hired house (formerly used as an hotel), in the town of Kingston, distant about a quarter of a mile from the Tête du Pont Barracks. It is a stone building, of two stories, and affords accommodation at the regulated scale to 21 patients. It is pleasantly situated on the margin of the lake, is well ventilated and lighted, and in the winter heated by stoves.

All the necessary offices are on the basement story, and the latrines detached and projecting into an arm of the lake by which the contents are received and swept away. The kitchen and lavatory arrangement, surgery, and store rooms, &c., are good and sufficient.

Royal Canadian Rifles' Hospital.

The hospital of the Royal Canadian Rifles is also a hired house, and, from the fact of its having been used as a custom-house, is called the "Custom-house" Hospital.

It is built of stone, is 60 yards distant from the Cataraqui, and 15 feet above its level.

It is calculated to accommodate 20 patients, at the regulation scale of 1,200 feet per man; the wards, seven in number, are large, well lighted, and ventilated. This house is situated in the same street (Ontario Street) as that of the 62nd Regiment above described, and is in all respects similar to it in internal arrangements.

On the ground floor there is a comfortable bath room, with all the necessary appliances, and the cooking department is well provided for.

Fort Henry Hospital.

This is a Government building, is situated outside the Fort on its eastern side, and at a lower elevation. It is close upon the margin of the lake, and about 50 feet above its surface. It stands in its own enclosure of about an acre of ground, in a fine open situation. It is a stone building, consisting of a central portion three stories high, and two small wings two stories in height. The ground floor is occupied as sergeant's room, kitchen, store, bath-room, &c. The kitchen is supplied with two large coppers and boilers, and an excellent American cooking stove.

The bath-room has hip and slipper baths, with hot and cold water laid on; the hot water being furnished from the coppers in the kitchen by means of piping

The first story contains three small wards, and surgery opening into a corridor, the former affording accommodation to from 8 to 10 sick.

The accommodation in the second story is nearly similar, the whole building being designed to accommodate from 16 to 20 sick, at the regulated scale.

The wards are well lighted and ventilated; the drainage is good; the latrines are placed in the rear, to which a covered passage leads, with natural means of flushing.

The water supply is good. On the whole, this is a very perfect little hospital, well situated, and admirably adapted for the small number it is designed to accommodate.

It has been used for the treatment of the sick of the Fort adjoining.

TORONTO.

The town of Toronto is situated on the northern shore of Lake Ontario, on a low flat clayey level, which stretches gradually northwards, to blend with a one of uncovered arable hills, which were probably at one time the shore of the lake itself.

The city is well built, open, and salubrious; but in the neighbourhood large tracts of marshy and boggy soil exist. It is well supplied with water from the lake by means of Public Works, but the system of drainage and sewerage, as in most Canadian towns, is defective. It is not subject to more than the ordinary average of zymotic disease.

In the west, stretching along the margin of the lake, are the Old and New Forts, where the Artillery and Military Train are quartered. The former on the outskirts of the latter, about a mile farther from the town.

The site of these Forts, in a sanitary point of view, is satisfactory.

At this Station, a Regiment of the Line (30th), two batteries of Artillery (E Battery, 4th Brigade; and 5th Battery, 10th Brigade), and a detachment of the Military Train have formed the garrison during the past year.

Barrack Accommodation.

This, as at other Stations, has been composed of buildings belonging to Government, and hired houses used for the purpose.

In the town, the 30th Regiment has been accommodated in the Parliament Buildings (the former seat of the Legislature), and in a large private house (a store), denominated "King-street Barracks," while a Detachment has been quartered at the Old Fort.

The Parliament Buildings are exceedingly well adapted for the housing of troops, the rooms being lofty, large, and well ventilated. They are built of brick, are divisible into a centre, and two wings, and are situated close to the margin of the lake in a park of about 6 acres of ground.

The two wings constitute the officers' quarters, while the centre portions contain the men's rooms, affording an average cubic space per man of 1074 feet.

The ventilation is effected by large cross sash windows, by doors, and central and corner ventilators, placed in the roof; and, in the case of one room, by a double-barrelled shaft in addition. All these apartments are sufficiently well warmed in the winter by means of stoves.

In rear of the main building and detached, are the orderly room, canteen, and other offices temporarily erected, and of slight construction.

The kitchen is good: means of baking and boiling, by ovens and boilers, adequate to all requirements.

The guard room is situated in one of the portals, with a somewhat inadequate cubic space of air for the number of occupants (the average being 344 feet per man); but this is in the way of being augmented.

The privies are the adopted water-closets formerly used by the Members of the Provincial Parliament, and are provided with ventilation. They are simple cesspits, no means of draining or flushing existing for their cleansing —this being periodically effected by hand labour; the urinals are of wood, but kept sweet and clean by careful attention.

There is an ablution room, with three cocks, and metal basins proportionate to the number in the Barracks; an ample supply of water from the Town Works; due warmth being secured by a stove in the winter season.

King-street Barracks (formerly a large printing establishment) accommodates the remaining portion of this Battalion (a small detachment at Old Fort excepted), and is well adapted for the purpose. The men have abundant cubic space, are not over-crowded, the ventilation of the rooms is adequate, and the means and appliances for cooking, personal ablution, latrines, &c., are very much on a par with what has been described under the head of the "Parliamentary Buildings."

The married people of this Battalion are partly accommodated in the Parliamentary Buildings, and in private houses hired for the purpose; no married and single being mixed up together.

New Fort.

These Barracks, occupied by Artillery, consist of two large stone-built blocks running backwards from the edge of the lake, and separated from each other by a space of about 200 yards. They form two sides of on open irregular parallelogram or square, the Officers' Quarters and Hospital constituting the remaining sides, each block being widely detached from the others. The whole is enclosed by a quadrangular stockade; the site is open and exposed to a free current of air, is elevated about 12 feet from the water's edge, and surrounded on three sides by an outlying common of broken, boggy land, where the musketry practice of the Infantry is carried on.

The men's Barracks are 2 storied, the upper only being used as dormitories, the lower appropriated to cook-houses and the usual offices.

The rooms are arranged in sets of two with a staircase intervening, the doors opening into one end of their longest side; each is calculated to accommodate 11 men at the regulation rate of cubic space. They are amply ventilated by 2 large windows at each end opening directly on the external air, in addition to which they have openings at each extremity covered by lattice work.

The cubic space per man during the past year has averaged little more than 400 cubic feet, but arrangements will be made by which this allowance will be augmented.

The kitchens are good and commodious, and supplied with boilers and ovens, the men being provided with baked meat at least twice in each week.

The ablution room is of brick and detached, is fitted up with 2 zinc baths and a sufficiency of metal basins, the water being laid on and drawn by taps in the ordinary way from a tank erected on the premises. Part of the ablution room is partitioned off as a wash-house for the women, and provided with boilers and benches.

The objection to this ablution room is, that it is rather too distant from the Barracks—at least the eastern block—and that the water supply is not always to be depended upon, the source from which it is drawn being occasionally, by reason of the subsidence of the lake, above water-mark.

The latrines and urinals overlie drains which converge to open into the lake, and are cleansed by the surface drainage, and frequently flushed by water.

Old Fort Barracks.

The Barracks at this Fort consist of several large wooden block houses built in the area of an intrenched Fort, a little elevated above, but close to the lake. The rooms are large, though not lofty, lighted by small narrow windows, which afford free ventilation, further aided by the presence of small wooden plates introduced into the walls, and which can be opened or shut at pleasure.

In this Barrack (in which the men of the 10th Brigade, R.A., and a detachment of the 30th Regiment are quartered), the average cubic space is 500 feet per man.

The kitchen arrangements are satisfactory ; means of baking by ovens have recently been introduced. The latrine accommodation is sufficient, and cleanliness well attended to. An ablution room, with the usual equipments, has just been provided for the use of the men at the Fort.

HOSPITALS.

Hospital Accommodation.

The Hospitals at this Station are two in number : a hired private dwelling in the town of Toron to for the accommodation of the sick of the Batallion quartered there, and another (Government) at New Fort, where the Artillery sick, &c., are received.

Each of these establishments calls for a few remarks :—

1st. Hospital for Regiment of the Line: This is a square red brick house, three stories high, standing in its own grounds, and facing the lake, in the same street, but about half a mile from the Parliamentary Buildings.

It is most substantially built, and affords accommodation for 40 patients at the regulated allowance of cubic space per man, provided the portion now occupied as quarters by the Medical Officer be appropriated to its legitimate purpose, for which there has been as yet no necessity.

On the sunken basement floor is an excellent kitchen, provided with a cooking stove, an apparatus for heating water, a copper, and an abundant supply of water from taps, laid on by the Public Water Company. An ablution and bath room, plunge and shower bath, with cold and hot water always at command, as well as gratings, basins, &c., besides pack store, surveyor's stores, servants' rooms, &c., are provided.

On the ground floor are surgery, day room, convalescent ward, Medical Officer's quarters, &c. On the first floor four wards, and on the second the same amount of accommodation for the sick.

The cubic space per patient in these several wards ranges from 1090 to 1950 feet. The ventilation, which is of the natural kind, is unexceptionable, and the windows protected from the sun by jalousies.

The floors are of deal, and the walls whitewashed. In rear of the hospital is a yard, 45 yards by 35, where are the latrines, dead-house, coal and wood stores, &c., &c., constructed of brick or wood respectively. There are separate privies for the women ; they are cesspits, and cleansed by hand labour. The urinals are of wood. In front of the building there is a good garden and exercise ground for the patients, prettily planted and laid out.

It will be seen from this description that this mansion is peculiarly adapted for a hospital, when its site, fitting, and internal arrangements are considered.

Hospital, New Fort

It has already been stated that this hospital forms one side of the open Barrack Square described above, and that it is sufficiently isolated from all other buildings. It has a northern aspect, and faces the lake; it is solely built of stone, and is 2 storied. On the ground floor are the kitchen, surgery, hospital, sergeants' and orderlies' rooms, and one ward for the sick.

On the upper 3 wards (2 large and 1 small) the building is calculated to accommodate 24 patients, with an average cubic space of from 1000 to 1200 feet per patient.

On the ground floor is a porch, and on the upper an open gallery appropriated to convalescents, which it is to be hoped will shortly be covered in, application having been made for the purpose.

A small court-yard bounds the area of the building, in which are placed the dead-house, latrines, wood-sheds, ash-pits, &c., the whole surrounded by a good stone wall.

The ventilation of the wards is effected by cross windows and a lattice ventilator at each end.

The kitchen arrangements are good, and fitted up with the means of varied cookng. It would be desirable to have the water supply laid on, it being at present fetched, by manual labour, from the Central Barrack reservoir; and a recommendation to this effect has already been made to the proper authorities.

The ablution room is an appendix of the kitchen, instead of being a separate apartment, which is objectionable.

The privies are ordinary cesspits, emptied by hand labour. On the whole this is a very compact little hospital, and well adapted for the accommodation of the limited number of sick it is designed to receive.

Such is a general outline of the Barrack Hospital accommodation at Toronto. It remains to be added that a series of excellent stables and offices have been completed for the use of the Royal Artillery and Military Train in the common adjoining, and to the south of the New Fort Barracks, which combine every recent improvement in their plan and construction; they are of wood, but substantially built.

At this Station the married people are either accommodated in hired houses, or allowed lodging money.

Bathing parades are practicable here during the summer months, and regularly carried out.

Nothing has yet been done by the Government at this Station for the recreation of the men, and ball-courts and skittle-alleys are a desideratum yet to be supplied. An Institute, however, has recently been established, chiefly by the exertions and pecuniary contributions of the better classes of the civil residents of the town, and has proved a great boon to the soldier. It contains a library of some 1400 volumes, a reading room supplied with newspapers and periodicals bagatelle table, and other games. Coffee, lemonade, &c., are to be had at a moderate price, but no beer or spirits are allowed on the premises.

The canteens are under proper surveillance, and healthily circumstanced as to ventilation.

The same remark applies to the guard-room and cells.

HAMILTON.

Prior to the large reinforcement sent to Canada during the past year, Hamilton was not garrisoned, and consequently there are no regular Barracks or Hospitals in the town.

It was necessary to hire buildings to meet both these requirements.

The garrison for the period embraced in this Report, consisted of one Regiment of the Line (Battalion Rifle Brigade) and a Battery of Royal Artillery (G Battery 4th Brigade).

The town itself, with a population of about 20,000, is situated at the western extremity of Lake Ontario, on Burlington Bay. It lies on a plateau some 300 feet lower than the level of the main land, and about 100 feet above that of the bay. The streets are wide and open, surface drainage good, but sewerage inadequately provided for, cesspits being the system in vogue ; the water supply is good and of excellent quality, being partly from wells, but chiefly supplied by a public company from Lake Ontario.

Notwithstanding the presence of a large marshy tract to the north-west of the town, intermittent fever, which was prevalent in the early days of the settlement, is now almost unknown among the inhabitants—a result supposed to be due to clearing, and in part to the cutting of a canal and railway through the centre of the tract in question.

The town is considered a very healthy one, and is most picturesquely situated.

The formation is a sandy loam, composed chiefly of primary limestone resting on clay.

Barrack and Hospital Accommodation

The temporary Barracks at Hamilton consist of a large block of warehouses in James-street, another similar block in McNab-street, and the building called the "Crystal Palace," the two former hired by Government, the latter put at the service of the military authorities by the municipal authorities at a merely nominal rent.

The hospital accommodation consists of a hired private house in the town, eked out by a wooden hut erected in its compound, for the Rifle Brigade ; and a small hut hospital, built on the grounds of the Crystal Palace, in which the sick of the Royal Artillery are treated.

James and McNabb Street Barracks.

The James-street Barracks are situated on the east side of the main street of the city, about three quarters of a mile from the lake, and 100 feet above its level ; they are built of stone, and are two-storied ; the rooms are irregular in size (some contain 12, some 20 men), but are lofty and well ventilated by windows on opposite sides, and afford a cubic space per man of 800 feet throughout.

In the McNab-street Barracks the rooms are larger, containing from 60 to 70 men each, and the ventilation, originally very defective, has been rendered completely effective by opening windows in the walls where such were required. In this barrack the average cubic space per man is 700 feet, although only 550 feet in the guard-room belonging to it.

At each of these barracks good kitchens have been established and supplied with boilers and ovens sufficient for the wants of the troops occupying them. At each also lavatories have been formed, well supplied with water and properly equipped with basins, &c. Baths have not yet been provided, as they are only required in the winter season, as bathing parades take place in each week in the summer season.

The latrines and urinals are necessarily after the cesspit fashion, but are carefully attended to. The same remark applies to the ashpits. In these two barracks the whole of the Rifle Brigade (except one company quartered in the Crystal Palace) are accommodated.

Crystal Palace.

This is a fine large wooden building, in the shape of an octagon, in an elevated and open situation in the western part of the town ; it is surrounded by a large park, on the skirts of which are ranges of stables occupied by the battery horses.

The basement floor is divided into four rooms in the form of a cross, the upper story following a like arrangement ; a centre part, surmounted by a cupola, completing the structure.

The rooms, alike in size and shape, are large and lofty, giving accommodation to 80 men, and with a cubic space of 872 feet per man. Two on the basement floor are appropriated to a canteen and store; all the others are used as dormitories.

From the peculiar construction of the building, whereby there is only one large window opposite each door, and the small bore of the central ventilating shaft, the ventilation is not so effective as could be desired—a representation of which, and the obvious remedy, have been submitted to the authorities, and will no doubt be duly considered and acted upon.

It being necessary to provide kitchens and lavatories, &c., for the use of the troops quartered in the building, these were formed by the erection of wooden houses at two opposite points of the basement floor in connection with the building, and to which one of the doors led. These temporary erections answer the desired purpose exceedingly well, the kitchens being supplied with cooking stoves and boilers, and the lavatories—from their proximity to the kitchen—with hot and cold water, and equipped in the ordinary manner.

The latrines are cesspits, and are emptied by hand labour, but kept in good order. Drains have been cut in all directions in the grounds surrounding the buildings for the escape of the surface and waste water.

HOSPITALS.

Rifle Brigade.

The private house which forms the Hospital of the Rifle Brigade is a small brick building, one storied, with a sunk basement. It stands alone in a small park or compound, and is encompassed with a wide verandah, giving it much the appearance of an Indian bungalow.

The site is elevated, dry, and open. It affords accommodation for 16 patients, at the regulation allowance of cubic space.

On the ground floor, raised 6 feet on a brick foundation, are the wards (two holding six, and two holding two men each), together with surgery, waiting room, sergeants' and ablution room. On the sunk area or basement are the kitchen, scullery, packstore, orderlies' and cooks' rooms respectively. All these wards and offices are good and suitable.

The ventilation of the wards is good, being effected by windows on opposite sides, which are also louvred.

The water supply is from a well in the scullery, and until lately was good and abundant, but is suspected to be limited by soakage, for which it is undergoing examination and repair.

The kitchen is well supplied with stoves and boilers, and the ablution-room is properly equipped.

The latrines are cesspits, emptied by hand, and at sufficient distance from the building.

The wooden hut which was erected in the compound, and close by the main building, to supplement it, is 64 feet long, 23 broad, and 12 feet high.

It is double-boarded and shingled, has six windows on each side, two at one end, and a door with porch at the other, with six ventilators in the roof. It is calculated to accommodate 20 patients, with a cubic allowance of air of 883 feet per patient, which for a hut is ample; in the winter season it is heated by two stoves, which pass through a brick chimney placed in the centre of the hut. There is no provision for cooking or washing, these processes being performed in the main building.

Royal Artillery.

The Hospital of the Royal Artillery is composed of two wooden huts recently erected in the enclosure of the Crystal Palace, from which they are fenced off. The larger of the huts is divided into a ward capable of accommodating 14 patients, with a cubic allowance of 800 feet per man, and two rooms at one end for purveyors' stores, &c.

The other hut contains a ward equal to the accommodation of 8 patients, at an allowance of 706 feet, the remaining portion of it being appropriated to surgery, sergeants' room, offices, &c.

These huts are lighted by eight windows each, and ventilation is secured by means of sliding iron plates placed at the bottom of a cylinder through which each stove pipe passes; they are well raised from the ground and porched; their drainage has been attended to.

Adjoining is a small wooden house which forms the kitchen and ablution room under one roof, for which purposes it is too small, especially in the hot season, which has led to the recommendation of a separate cook-house being provided.

Within the Hospital enclosure are dead-houses, latrine, &c.; the latter are cesspits, and much too large for the number of patients the huts are calculated to hold.

The water supply is furnished from the Hamilton Water Works; the wooden fence around the Hospital is too high, and not sufficiently open, by which free ventilation is more or less impaired.

Such is a general description of the Barrack and Hospital accommodation provided for the troops in Hamilton. The married people are for the most part lodged in private houses.

At this Station there is an excellent public gymnasium, advantage of which has been taken by the Officer commanding the Rifle Brigade, all the men of that corps being passed three times through the course of instruction during the year, under a properly qualified teacher, including the single and parallel bars, &c., with manifest advantage to their health and morale.

Allusion will afterwards be made to the Rifle Practice Ground at this Station, which was found to be unhealthy, and recommended to be changed, which is to be done accordingly.

LONDON.

During the past year the garrison of London has consisted of a Regiment of the Line (63rd Regiment), a Battalion of Artillery, Company of Royal Engineers, and the Headquarters of the Royal Canadian Rifles, and Military Train.

London is an inland city, of comparatively recent date, with a population of about 12,000. It stands in the centre of a rich agricultural district, only partially cleared, and on the banks of an insignificant river called, after its great prototype, the Thames. It is a less healthy town than any of those in which troops are placed; this is evidently due to three causes, viz., the state of the river, the marshy and undrained character of the surrounding district, and the close proximity of the primeval forest.

The Thames carries to the lake a very small body of water, which is at most times muddy and fœtid from the presence of the town sewerage, &c., which is passed into it, and in the dry season its banks expose a large surface of stinking mud, all fertile sources of disease, again, the marshy and inclosed tracts, must doubtless exercise a malign influence on the health of the inhabitants.

As might have been expected, fevers of the intermittent and typhoïd type, diarrhœa, and allied disorders are said to be frequent among the civil population although every year on the decrease in proportion as drainage and cultivation are extended. The water supply is from wells, and is at the present time wholesome; but as these wells are not deep, and nearly all the sewerage is allowed to soak into the soil, the time may reasonably be anticipated when a purer and more plentiful supply will become a necessity.

The streets are wide, and the houses often straggling and standing apart, so that no bad effects from crowding exist.

Barracks and Hospitals.

The barracks occupied by the troops here consist of those already existing and belonging to the Government, and hired buildings.

The two hospitals are Government property.

The 63rd Regiment is accommodated in three different buildings; the first is called "Royal Barracks," containing head-quarters, and 284 men; the second, "Victoria Barracks," 147 men, and the "Palace Barracks," 268 men.

The Royal Barracks.

The Royal Barracks (Redoubt-street), formerly the Exchange, is a brick three-storied building with a sunk floor, part only of which latter is used for the kitchen and sergeants' mess.

They stand about 200 feet from the banks of the Thames, and about 50 feet above the level of the stream. From observations already made, it will readily be conceded that their site is not a desirable one, although no bad effects have as yet been observed from their proximity to the river.

The rooms are in two blocks, one (two-storied), containing only one large apartment, beneath which are the cook-house and ablution-house; the other, (three-storied), containing a variety of rooms of smaller dimensions, those of the two upper floors being used exclusively as dormitories, while on the ground floor of this block, in addition to the men's rooms, are orderly, reading, sergeants' mess, guard, and prisoners' rooms, and four cells on either side of the archway by which the barrack is approached.

All these rooms are sufficiently ventilated by doors and windows, or gratings, but on the ground floor there is some difficulty experienced in this respect, from the necessity of the windows being kept closed, to prevent the introduction of drink, and louvres have consequently been recommended. The general objection to the rooms is their diminutive size, two only excepted. Their cubic space ranges from 362 to 1·077 feet per occupant.

The guard-room in this barrack is rather small for the number of men accommodated in it, and the ventilation defective, both of which circumstances have been duly reported, and will doubtless be remedied. The cells are indifferent in point of space and ventilation, but are only used for the confinement of drunken and refractory prisoners awaiting, not undergoing, punishment.

The cook-house and ablution-room are on the ground-floor (partly sunk) of the first block described.

In the first are no ovens, and the cooking stoves substituted for them are not sufficient for the numbers accommodated in barracks—an unaccountable omission, which immediate steps have been taken to supply.

The water supply for the washhouse is fetched by hand labour. The latrines are cesspits, ventilated by louvres.

The canteen, though small, is well ventilated and wholesome. The whole of the drainage of this barrack is defective, although steps have already been taken to remedy this in some respects, by the formation of a cesspool for the reception of the waste water from the washhouse, and the laying down of wooden open drains to carry away the surface and pump water as it accumulates.

Victoria Barracks.

The "Victoria Barracks" (King-street) are about 400 yards from the Royal Barracks, and an equal distance from the River Thames. It is a three-storied brick building, on rather a low elevation, closely hemmed in by other private buildings, and with very limited out-of-door accommodation for the necessary offices. The men's rooms, however, are good. On each floor is one large apartment capable of containing from 36 to 50 men according to regulation cubic space, while on each of the two upper flats are three small additional ones for non-commissioned officers.

They are all sufficiently well ventilated by means of doors and windows.

The cubic capacity actually at the command of the soldiers has been 606 feet per man, and less in the case of the married families.

In the yard and detached, are the kitchen, ablution-room, guard-room, latrines, and other necessary offices. The cook-house is provided with four boilers and a cooking stove, the latter (as in the Royal Barracks) insufficient, and duly represented. The ablution-room is properly equipped, the water supplied from a well in the compound, at one time rather deficient in quality, but now abundant by reason of the well having been recently deepened.

The latrine is of the ordinary description (cesspit) and emptied by hand

The guard-room and cells are makeshifts, the space limited; ventilation by louvred windows.

Palace Barracks.

The remaining and larger part of the 63rd Regiment is accommodated in the lower floor of the Palace Barracks, which are in every way superior to those just described.

The Exhibition or Crystal Palace building at London is built very much after the model of that at Hamilton, being a huge octagon surmounted by a central dome. The walls are of brick, and the roof and other parts of wood; it stands in a park or enclosure of several acres of green sward, the soil being dry and sandy, and the situation the most elevated and open in the neighbourhood. Through the lower and distant part of the enclosure, courses a tiny stream or rivulet, to empty itself into the Thames; and along the margin the ground is somewhat damp and boggy.

The building itself is portioned off by wooden partitions into seven rooms on the ground floor (the remaining section of the octagon being used as passages and stores), while the upper story joins one large circular apartment, used by the Artillery.

All the rooms are lofty and capacious, and well ventilated, the central dome having 24 windows in its enceinte, opening by pullies, forms an admirable ventilating shaft for the whole building; all the doors of the rooms open directly into it; five windows to each room afford abundant light and fresh air. Under the dome on the ground floor are three small rooms for non-commissioned officers; the partitions dividing the rooms do not rise more than half way up the walls, and all the men accommodated in these barracks have more than the regulated allowance of cubic feet of air.

Attached to the building is a large well-ventilated cook-hoose, supplied with boilers, but insufficiently with means of baking, as in all the other barracks occupied by this regiment.

The latrines, &c., are on the cesspit principle. On the grounds is an excellent canteen-house, with separate room for non-commissioned officers, and a large one fitted up with stage, &c., in which theatrical performances occasionally take place.

Between the cook-house and canteen is ths ablution-room, raised on a wooden pier, somewhat limited in space for the number using it, equipped in the usual way, but water not laid on. Bathing parades take place in the summer season. The guard-room and cells (three in number) are in a satisfactory state, as to capacity, ventilation, light, and warmth.

The surface and waste-water drainage is of a makeshift character; it is carried beyond the precincts of the building, and then allowed to find its own way by soakage into the loose porous sand.

The married people of this regiment were at one time accommodated in the Infantry Barracks, but of late the two upper floors of the Victoria Barracks have been appropriated to their use. They are well housed, but not so well provided with washing, latrine, and cooking appliances, as they would be under a more permanent arrangement.

Royal Artillery Barracks.

The barracks occupied by the Royal Artillery during the year have been:

1. The Artillery Barracks.
2. The Exhibition Building.
3. The Shed Palace.

1st. The Artillery Barracks is a small two-storied building on the old plan of cavalry barracks, the horses being below, and the men above. It is the property of the Government, and calculated to accommodate from 50 to 60 men, at the regulated cubic capacity, and this number is at present little if at all exceeded.

The rooms are seven in number, two being in the occupancy of married Staff Sergeants.

The ventilation is by doors and windows, and an apparatus recently introduced into the roof of each. The kitchen and latrine arrangements are satisfactory, and there is a good ablution-room, with water laid on.

2nd. The Exhibition Building has already been described ; the remarks as to cooking-house, ablution-room, latrines, &c., being applicable, except that the cooking stoves in kitchen are sufficient for the numbers using them.

3rd. The Shed Palace is situated within the enclosure of the Exhibition Building; hence its name. It is a one-storied wooden building recently erected, and consists of two large rooms of the same size and shape, entered by a central passage ; from the large rooms are partitioned off two non-commissioned officers' rooms.

This barrack is well lighted and ventilated by cross windows and doors, and ventilators in the roof ; it is calculated to contain 40 men at the regulated cubic capacity for such buildings.

In rear is a garden, the kitchen, ablution-room, latrines, &c., all in a satisfactory condition.

Royal Engineers Barracks.

This is a hired building on the north side of the town, and about a quarter of a mile from the river.

It is a three-storied brick building, formerly used as a coach factory, and consists of a basement sunk about 18 inches below the ground, forming one large apartment, and on the upper stories the same amount and kind of accommodation exist. All these rooms are well ventilated by numerous doors and windows, and by ventilating shafts through the roof.

The cubic space to the present number of occupants gives an average of 590 feet per man.

In the court-yard behind are the kitchen (with sufficiency of boilersand cooking stoves), ablution-room properly equipped, latrines (cesspit), wash shed, guard-room, &c., all in a fair sanitary condition. Thesurface drainage is by wooden conducts leading to a general cesspool, as is the custom in the town. The water supply is from a well.

Royal Canadian Rifles Barracks.

The men of the Royal Canadian Rifles are quartered in the "Infantry" and "Palace" barracks—the married in the former, and the single in the latter—which have been already described.

"Infantry Barracks," situated on high ground north of the city on an open plateau, having a sandy soil ; it is a substantial wooden building, two stories high, and forms the north side of a parallelogram—the Officers' Quarters and Hospital forming the other sides of the barrack square. It contains 36 rooms of equal size, and several smaller ones for the Non-commissioned Officers. They are good, well ventilated, and not over-crowded.

During the year two ablution rooms were constructed in rear of the block, and fitted up with baths and the usual basin accommodation, which has proved a great boon to the married people.

The cooking arrangements are satisfactory, performed in barrack rooms in winter, and in summer in sheds erected for the purpose in the Barrack Square ; the latrines are on the cesspit principle ; water supply is good and sufficient.

The prisoners are confined in three distinct buildings, viz., a barrack-room in the Infantry Barracks, another opposite the guard-room, and lastly, a wooden erection just outside the barrack gates. These several places of confinement are capable of holding 40 prisoners, there being 20 cells in all. They are all well lighted, and ventilated,se and to one of these, recently erected were attached the usual offices of cook-house, washhouse, latrine, &c. of a military prison.

To the sanitary state of these several places of confinement, no exception can now be taken, although one of them at first was objectionable, but remedied on representation.

HOSPITAL ACCOMMODATION.

Hospital, 63rd Regiment.

This is an old log building of two floors, situated just outside the Infantry Barrack gate, capable of holding 30 sick, at the ratio of 600 cubic feet per patient, and is the property of the Government.

The wards are six in number, four on the upper, and two on the ground floor; they are well lighted and ventilated by cross windows, and the interstices between the logs admit more air than is in winter agreeable.

On the ground floor, in addition to the two wards for the sick, is accommodation for the hospital sergeants and orderlies. Behind the Hospital, and connected with it by a door, is a small room recently erected for a surgery; and more to the rear and detached are the kitchen, ablution-room, pack-store, dead-house and latrines, all enclosed within a picket fence, much the worse for wear.

All these offices are suitably equipped, and kept in a sound sanitary condition.

Royal Artillery, Royal Engineers, and Royal Canadian Rifles Hospital.

The remaining hospital establishment is that already referred to as facing one side of the open Infantry Barrack square. It is a two-storied wooden building owned by Government—the lower story, containing one ward, surgery, sergeants' quarters, bath room, and kitchen.

In front is a verandah, at one end of which is the ablution-room, and at the other the steward's apartment.

In the upper story are four wards, all well ventilated by cross windows and doors, with ventilators in the upper part of each window.

At the back of the hospital is a large yard, in which are the usual offices, all properly equipped, and in a good sanitary state, as also a well, from which water is laid on to the ablution-room.

This establishment is capable of holding 50 patients, giving to each the usual cubic space of air.

QUEBEC.

The garrison of Quebec consists of two Regiments of the Line and a battery of Artillery. The barracks occupied by the former are the "Citadel" and the "Jesuit," and by the latter the Artillery Barracks. To the Citadel Barracks a Regimental Hospital is attached; the sick of one Regiment of the Line and of the Royal Artillery are treated in what is known as the "General Hospital," in St. Louis-street.

Quebec is as romantically as it is sanitarily situated, perched on the extreme point of a high promontory, in the centre of a vast amphitheatre of luxuriant and picturesque country, and washed on two sides by the rapid tidal currents of the St. Lawrence and St. Charles. The facilities for free ventilation and effective drainage, as well as market supplies, are manifest.

The town, which contains some 50,000 inhabitants, is considered to be very healthy. No disease can be said to be endemic. It has, however, on more than one occasion been ravaged by cholera and typhus, the latter introduced into it generally by emigrants from the old country.

Quebec is in advance of all the other cities of Canada in sanitary improvements. An excellent and abundant supply of water has of late years been introduced into it from a lake ten miles distant, and drainage and sewerage are extensively and rationally carried out.

BARRACKS.

"Jesuit" Barracks.

The "Jesuit" Barracks (in which the 1st Battalion 17th Regiment is quartered) is an old collegiate building, which has been used for the accommodation of troops since 1776. It is situated on the north-east slope of the promontory Cape Diamond, in the centre of the upper town, and although surrounded by private buildings, has a good deal of open space about it, from its own square and the marketplace adjoining.

It is a three-storied stone and brick building, with a basement arranged in the shape of a parallelogram, 200 by 240 feet, enclosing a courtyard; attached is a good parade ground, once the collegiate gardens.

The basement is not used as dormitories, but appropriated to stores, &c., the men occupying the stories above. As in all buildings of the seventeenth century, the rooms are low-roofed and confined; but as each story is provided with a wide corridor, and artificial ventilation has been freely introduced, their sanitary state is satisfactory. The cubic capacity, however, is only 372 feet per man, which, even in the winter of this climate, is insufficient. In the summer, the barracks are disembarrassed of two Companies, when the ball practice at the Island of Orleans commences.

There are two kitchens in the Jesuit Barracks, fitted with an oven and boilers sufficient for variety of cooking.

The ablution and bathing accommodation is barely sufficient; water supply abundant from the water-works, and basins proportioned to the number requiring them; the latrines and urinals have not sufficient flushing power; the other offices are in a good sanitary condition.

The arrangement of the casemates in this barrack is very similar to that already described under the head of Fort Henry, Kingston, although, of course, on a larger scale; the site is elevated and open, 350 feet above the level of the river, with an enclosed area of about 40 acres.

The rock upon which the fort stands is of old formation, composed chiefly of a series of black shales, with bands of limestone. The casemates occupied by the men form the two first bastions (Richmond and Dalhousie), opposite to which are the hospital and officers' quarters, and scattered within the *enceinte* are detached buildings of various kinds, used for the accommodation of married people, stores, gymnasium, &c.

In one of these detached buildings (Mann's) 1½ Company is quartered, the remaining part of this wooden structure being used as a school and reading-room.

The bomb-proof rooms are ill calculated for the accommodation of troops in the time of peace, however well they may be for temporary occupation in the emergency of war. In the winter they are damp and cold, and most difficult of ventilation. Each accommodates 24 men, which allows only an average cubic space per man of 390 feet.

On their inner aspect are a door and two windows; on the outer, facing the ditch, the wall is pierced for from three to five loopholes (18 inches by 9), above which and near the roof are the same number of ventilating apertures (3 inches square), but which do not pass through the wall, but communicate with the loopholes by small tubes. The theory of this arrangement is, that the heated air passes down these tiny shafts, and so escapes; the practical result, however, being, that it is as often blown back into the rooms (the prevailing winds favouring this direction), and so the products of the men's exhalations and the stoves accumulate and become concentrated, in the winter season.

In the summer, the doors, windows, and opposite loopholes (which in winter are sashed and glazed) being kept open, the ventilation is more efficient. It has been proposed by Assistant-Surgeon Oliver, 4th Battalion 60th Rifles, to introduce a small wooden tube to lead from the mouth of the ventilating shaft in the loophole, and carried outside the building a few feet in a curving direction, which is worthy of a trial, and would not infringe the Engineer's requirements, if not weakening the wall or roof.

The water supply of this fort is partly obtained from wells, but chiefly is collected from the roofs of the buildings and surface drainage, and stored in tanks. The water in one only is considered fit for drinking and cooking purposes, that of the others being used for the ablution-room, and to some extent in flushing the latrines and sewers. It would be very desirable that the town water were laid on in this fort, which it could be at little expense; and although such could not be trusted to in time of war, it would prove a great boon in ordinary times, in thoroughly flushing and purifying the privies and drains, very imperfectly cleansed at present. The cooking arrangements of this fort are also open to censure, the kitchens being in the men's quarters on the ground floor, the ventilation of which is imperfect, and the heat objectionable. They are filled with ovens and boilers, by which means a variety of cooking is secured.

It were desirable that these kitchens were removed outside.

The ablution-houses are commodious and suitable; the supply of water from the tanks generally sufficient, but no means of heating it—there ought to be in the winter season. Baths are also desiderata.

The latrines (men's and officers') would be the better for a stronger flushing power to carry their contents into the common sewer, which passes out of the fort into the town main drain.

On the score of amusements and recreation, a good reading-room and gymnasium exist in the fort, the former containing an excellent library, periodicals, and newspapers; the latter fitted up with all the means and appliances of the athlete. There is also an open ball-court, which ought to be floored and roofed for winter use. A skittle-alley similarly protected is much wanted.

In "Mann's" Buildings the cubic space per man is 428 feet.

Royal Artillery, or Palace Gate Barracks.

A stone two-storied building, equal to the accommodation of a Battery with its full equipment. The men are placed in the upper floors in eight rooms, 20 × 28 × 10, giving each occupant an average of 485 cubic feet.

The kitchen arrangements are satisfactory, with oven and boilers for variety of cooking. The ablution-room rather small, but properly equipped; no baths however. A plentiful supply of water is carted by the Commissariat (which is objectionable on many grounds), that for ablution purposes is procured from a well in the barrack square, but should be laid on from the town waterworks.

The sick of this Battery are treated in the Garrison Hospital, three large wards being given over for that purpose.

In concluding a description of the barrack accommodation at this station, it only remains to be stated that that for the married people is inadequate and objectionable. The families are either crowded into a barrack-room, where nothing but a flimsy blanket divides them from each other, or are scattered about the town in the worst hovels existing in it, the 4*d.* a day lodging allowance not admitting of better accommodation being procured.

HOSPITALS.

Garrison Hospital.

This is an oblong block of stone building, situated in St. Louis-street, in the upper town, composed of four floors and a basement, with a small courtyard around it. It is an old-fashioned monastic or collegiate institution.

On the basement are the kitchen and servant's room; the first floor is appropriated to the Army Medical Stores and Staff offices, while the two upper floors only are used as wards, in which the sick of the regiments quartered in the "Jesuit" Barracks and the Palace Gate Barracks are treated. These wards are wide and roomy, although low-roofed, with a wide corridor at one end, and possess a cubic capacity of over 1000 feet per patient, independent of the corridor in question, which forms an excellent promenade for convalescents, being enclosed and sashed. In several of them partial partitions have been introduced. This is objectionable, and has been recommended to be removed.

During the past year, the town water has been introduced into the hospital, but has not yet been turned to that account of which it is susceptible. The bath and ablution accommodation is inadequate, consisting of a single fixed bath on each floor, with one tap, and without waste-pipe, the supply being from a tank overhead.

It is to be hoped that, before the expiration of another year, the town water will be carried to the upper floors, and a more suitable bath-room, with water closets, be provided (of which there are none inside the building). It is, however, satisfactory to state that outside the building a range of excellent waterclosets, with proper flushing apparatus, has just been completed, and is a great boon to the sick, the old latrines having been found very objectionable.

The outhouses are in a good sanitary state, one of them having been recently converted into a cook-house, the kitchen on the basement being found insufferably hot in the warm season.

On the whole, this building is sufficiently large, and well suited for the purpose to which it is applied, although the site, surrounded by private houses and stores, is not so open and exposed as is desirable.

This is unquestionably the best Regimental Hospital in the Command, and one of the most modern. It is a two-storied, bomb-proof, stone building, situated in the higher ground of the Citadel enclosure, and detached. It has a north and south aspect ; it consists of five large wards (40 × 20 × 10), and one small one (20 × 13 × 10), affording accommodation to 38 patients at the regulated cubic capacity of 1,200 feet per patient, besides a good kitchen, surgery, ablution-room, cook-house, sergeants' room, &c. &c.

The ventilation of the wards is by cross windows and portholes. The latrines are cess-pits, there being no connecting flushing apparatus with the tank, as ought to be the case.

Adjoining and in the hospital yard, a two-storied wooden house has recently been erected for infectious cases, or others requiring segregation.

PRISON.

There is a good Military Prison in this garrison, conducted on the principles, and under the regulations in force in the Service for such establishments.

MONTREAL.

The commercial capital of Canada is garrisoned by four Regiments of the Line, three Batteries of Royal Artillery, one Company Royal Engineers, and one Battalion Military Train.

The city lies at the south side of the Island of Montreal (formed by the junction of the Rivers Ottowa and St. Lawrence), and contains a population of over 100,000 inhabitants.

It is situated on the northern bank of the St. Lawrence, on a level plain which winds gradually upwards and northwards in two parallel ridges until it meets a hilly eminence called the "Mountain," which rises abruptly to a height of 740 feet, and gives its characteristic feature to the city. Deep beds of sand, unctuous clay, underlaid by compact boulder clay, constitute the basis on which the city stands.

The "Mountain" is composed of beds of Silurian limestone, traversed by veins and dykes of trap, and capped with a mass of greenstone, forming the material out of which the greater part of the city buildings have been quarried. It covers an area of over 3,000 acres.

The sanitary arrangements of the city are far from satisfactory ; there is no extended system of sewerage, although the necessity of this has recently been acknowledged, and large works with this view have been commenced.

In the part of the town occupied by the poorer classes, the population is dense, and means of cleanliness little respected ; but, generally speaking, the streets are wide, and the houses not over thickly aggregated.

The city is generally admitted to be very healthy. There is a good water supply, which is collected in two large reservoirs towards the upper part of it and distributed thence by pipes throughout its extent.

No disease, strictly endemic, can be said to find a home within its circuit or environs.

The only Government Barracks are the "Quebec" and "Royal Artillery."

When the garrison was largely reinforced in the beginning of the year, it was found necessary to provide barrack and hospital accommodation for three extra batteries, Military Train, &c., for which buildings were hired, and huts erected for the Military Train. Of these it is necessary now to give a description.

Molson's College.

In this building the 1st Battalion of the 16th Regiment is quartered.

It is a brick structure, 200 feet by 40, of oblong form, recently erected, and for a short time used as a college. It consists of a basement, and three stories, and stands in an open space or yard of about an acre, in the east end of the city, close upon the water's edge, and 60 feet above its level. It is approached on the west by a road, and on the north by St. Mary's-street; when taken possession of, it was found necessary to erect a wooden guard-room, and lock-up, &c., in the yard, and latrines in the adjoining premises.

This building is well adapted for the purpose to which it has been temporarily converted. At first, it is true, there was some doubt as to the upper stories being strong enough to bear the weight of the men's iron bedsteads, on which account trestles were substituted, but no fears are now entertained by the engineers on this point.

Each floor is divided into four large rooms of equal size, running the whole breadth of the building, 74 feet long, and 14 high, each giving accommodation to 70 men, with a cubic capacity of 492 feet per man.

The lighting and ventilation are ample, by means of 8 large windows, on opposite sides of each floor, provided with sliding frames.

The basement floor is told off for kitchen, ablution, bath rooms, and canteen, &c., for which it is well adapted. Variety of cooking is secured by Canadian stoves and boilers in sufficiency.

In the ablution and bath rooms there are four plunge baths, in addition to the ordinary equipment, and they are abundantly supplied with town water. The latrines are good, with ample means for flushing; one of the two turrets projecting from the flat roof of the building is used as a library and reading-room.

On the score of amusements for the men, none are provided beyond those engaged by the garrison generally, to which allusion will be made by-and-bye.

The guard-room is sufficiently large for the number in it. On the whole, this barrack may be considered good and suitable.

Adjoining it is a private chapel, the upper floor of which is used for Divine service; the lower as the regimental school.

The Regimental Hospital (to be afterwards described) is within easy distance of the barracks.

For the accommodation of the 2nd Battalion of the Guards, a large block of buildings recently erected, and just finished, in St. Paul's-street, as stores or warehouses, was hired and equipped in January last.

The situation is not very good, being in the business part of the town, and 150 yards from the river, but there is a large garden or open space behind the block, used as a parade ground, which helps to separate it from the adjoining warehouses, and the population in this quarter is small, few houses being inhabited.

The building itself is a very elegant and substantial range, four storied, with sunk basement, and composed entirely of stone. Each battalion has 15 rooms, 120 × 27 × 14, capable of containing 54 men, with a cubic capacity of about 700 feet per man. Sufficient ventilation is obtained by very large opposite windows, and a huge shaft running from basement to skylight. The window in the roof is removed in the hot season—the warehouses communicate with each other by large front and side doors.

In the basement are the cook-houses, ablution and bath rooms, all amply equipped, and provided with hot and cold water, and means of boiling, baking, roasting, &c. The latrines are on the cesspit principle, and emptied by hand; the ashpits are kept clean and sweet. Guard-room, lock-up, and other necessary offices have been enclosed in the Barrack Square; they are temporary wooden structures.

The drainage of the barracks, at one time very defective, has been much improved, and the parade ground levelled and gravelled.

The families of the Brigade have two large rooms on the basement floor given up to them as quarters, each of which is divided into 20 apartments by wooden partitions 8 feet high, and which affords a healthy and comfortable habitation, combined with privacy. Means of cooking and washing are also liberally supplied.

On the whole, these barracks will compare favourably with any occupied by the Brigade in London or elsewhere.

The College Barracks.

This is a hired building, capable of accommodating about 700 men, formerly a Roman Catholic College, whence its name. It is a substantial stone building, standing in a court or enclosure of about 10 or 12 acres. The building is in the shape of an H, having a centre range connecting with two side wings, the proper front of the structure facing west; it consists of a basement, first, second, and attic floors, in all of which troops are accommodated.

The three first floors have each a wide and well-lighted corridor, by which the wings are connected, and the upper floors are reached by two spacious wooden staircases. The rooms of the basement floor have a height of 11 feet, and those of the first, second, and attic floors, of 10, 9, and 8 feet respectively.

In the basement are the Sergeants' Mess, orderly room, cells, guard and bath room; on the other floors are the barrack-rooms, Staff-sergeant's quarters, and ablution-room.

The largest and best rooms are in the wings; these are extremely well lighted and ventilated by opposite and end windows, and contain from 23 to 40 men each, with an average cubic space of about 500 feet per man.

The rooms opening on the corridor have, as a general rule, two windows on each side, opposite the door, and accommodate from 10 to 14 men, although one or two rooms are somewhat larger; those in the attics are the largest of all, one accommodating 73, and another 77 men, with a cubic capacity ranging from 393 to 402 feet per man. The other rooms on the same floor contain from 24 to 35 men each, with an average cubic space of 400 feet, being lighted by dormer windows.

Throughout the building the cubic space per man averages above 400 feet; the ventilation, which, on first occupation, was in several rooms defective, has been increased by the introduction of ventilating frames into one or more windows in each room.

The drainage is indifferent; the worst feature about the barracks is the existence of a sluggish stream, containing sewage, which passes through the enclosure, and is in part only covered in—over this the latrines are placed, and although excreta are in this way effectually removed, there is more or less stench and exhalation from this stream during the hot weather, from which bad effects may come.

There are five latrines, but no bath, in this barrack; the ablution-rooms are lofty and capacious, supplied with town water, and properly equipped with basins, &c., with a stove in each in winter.

The kitchens are partly in the basement and partly outside; the ventilation, which was defective, has lately been largely increased. Means for baking and roasting are provided. The latrines are of wood, composed of two rows of seats placed back to back, and separated by a bar. They are situated over the stream passing through the barrack enclosure, which serves to flush them, and has already been described.

Quebec Gate Barracks.

This is a very old building, belonging to Government, and was fitted up as a barrack in 1837. It is built of stone, forms three sides of a square, the remaining side being made up of washhouses, workshops, latrines, &c., &c. It is situated close to the river, on the east side of the city, in a neighbourhood pretty densely populated. It is divided into a north wing, south wing, and Ordnance Store wing; the two first being computed to hold 582 men, and the latter 362 men, but with a cubic capacity much below the regulated standard.

The north and south wings contain each 13 rooms, 37 × 34 × 10, or 24 × 14 × 8, respectively. These hold from 18 to 27 men each.

The Ordnance Store wing contains six large rooms and two attics, each room from 55 to 57 feet broad, by 29 to 34 long, and 8 to 9 feet high, capable of accommodating 50 men each, at a cubic capacity of about 500 feet each.

These rooms are pretty well ventilated by doors and opposite windows, and ventilating frames. The attic rooms were supposed to be better ventilated than those of the lower floors, in consequence of having additional openings in the roof, but these were found to have no communication with the outer air, and were therefore useless—a fault which has been remedied.

The cooking houses are good, and have recently had increased oven accommodation given them, whereby variety of diet is secured. The water supply is ample from the town waterworks. The ablution-rooms have also been enlarged during the past year, and are now sufficient and properly furnished with baths and basins. The drainage has also undergone improvement, both sewerage and surface, and the latrines and urinals have had a greater supply of flushing power applied to them, by which their sanitary condition is promoted.

The guard-room has had its cubic capacity increased by raising the ceiling and introducing dormer windows into the roof.

A barrack adjoins that just described, it is of brick, and of the old Cavalry principle, viz., the men's quarter over the stables. In the old part of the barrack are six men's rooms, and in the new brick range, accommodation for 40 men additional. The means of cooking, ventilation, &c., are much the same as those described under the Quebec Gate Barracks.

St. Helen's Isle.

In the Island of St. Helen, opposite Montreal, is a small bombproof barrack, consisting of two floors and attics, affording accommodation to 50 men, with all the necessary offices, and with the regulated cubic capacity.

The sanitary state is satisfactory.

Military Train Barracks, Hochelaga.

The old wooden Cavalry Barracks, erected during the period of the rebellion at the village of Hochelaga, 1½ mile distant from Montreal, were handed over to the Military Train as barracks, but, in consequence of their affording insignificant accommodation, two wooden huts were erected in an open space adjoining the river, 20 feet above its level. In addition to these huts, part of the old stables was taken down, and a two-storied hut erected on the space so obtained. These huts are built of timber—the larger of the two with planks—are well lighted and ventilated by glazed opposite windows, and ventilators in the roof. The stove-pipes are passed through brick masonry, placed in their centre.

The total accommodation thus provided is sufficient for 200 men at the regulated cubic space per man—but a lesser number of horses. The means of varied cooking, washing, &c., is provided in separate houses. The latrine is a cesspit, and emptied by hand. The water supply is from the river ; lavatories are good, and properly equipped.

The guard-room is sufficiently commodious, and the stables and out-houses kept in good and satisfactory condition.

HOSPITALS.

The sick of the garrison are accommodated in four hospitals, situated in different parts of the city, adjoining the several barracks, one being Government property, and the remainder hired buildings converted to this use.

The hired buildings will be first described.

Molson's Hospital.

This, which is the Regimental Hospital of the 1st Battalion 16th Foot, is situated within a few hundred yards of the barracks of that corps, but farther removed from the river. It is a square-shaped brick villa, two-storied, with basement and attics, with verandahs on both floors extending completely round the buildings. It stands on an elevated and open piece of ground of about two acres extent, formerly a garden and paddock. It is capable of accommodating from 30 to 40 sick, with the usual establishment of hospital attendants.

On the basement are the kitchen, sculleries, lavatory, purveyors and pack stores, &c. &c. On the first floor are two large wards, bath-room, watercloset, sergeants' quarters, and surgery ; on the second floor are two large and two smaller wards. In the attics are large rooms used for spare stores, and the dead-house (temporarily).

The large rooms are told off for eight sick each, the smaller four and five respectively. During the past year, the cubic space per patient in this hospital has averaged over 1000 feet. The wards are well lighted, and ventilated by large opposite windows and doors entering into spacious corridors. The washing and culinary departments are amply provided for. The latrines are cesspits, emptied by hand; the drainage is indifferent. There is a good promenade ground for the patients.

On the whole, this house, which was rather dilapidated when possession was taken of it, has been repaired and cleaned, and now very well answers the purpose to which it is applied.

The Guards' Hospital.

This is a large substantial, stone building, adjoining the Guard's Barracks, and abutting on the barrack square, with which it communicates by a back entrance.

It is appropriated by the sick of both battalions, the Fusiliers having the lower, and the Grenadiers the upper floor, the basement and attics being common to both.

Each of the two floors in which the sick are placed consists of two large rooms, communicating directly, 35 × 29 × 10 and 64 × 29 × 10 respectively, thus affording accommodation for 24 patients on each floor, at the regulated cubic capacity of 1,200 feet per patient. These wards are lofty, wide, and cheerful, well lighted, and ventilated by seven opposite windows on each side, besides ventilators in the roof and window-panes. On each of those floors is a small room for the surgery, and two waterclosets.

On the basement are two kitchens, provided with everything necessary for the preparation of the patients' diet, a large lead-floored bath and ablution room, with the necessary equipment, pack store, purveyor's store, &c. &c. In the attics are well-ventilated rooms for special cases, and sick prisoners, while in the yards are the latrines (communicating with the building by a covered way), dead-house, ash-pit, wood store, &c. &c.

In a small house adjoining, accommodation is furnishedfor two hospital sergeants and nurses.

Water is supplied from the town works, and the latrines are flushed by the same means.

Much trouble was given by the defective drainage of this building, which, after considerable outlay, has been put to rights.

On the whole, this building is very well adapted for the purpose to which it is applied.

College Hospital.

This is a hospital provided to receive the sick of the College Barracks, in the immediate neighbourhood of which it is situated.

It consists of a substantial stone block of buildings, formerly used as warehouses, composed of ground and three upper floors. Each of these floors form one large room, 100 + 30 + 15, the windows being at the extreme ends, extending from floor to ceiling, and, indeed, entirely compose their ends. The floors communicate by inside wooden staircases.

The ground floor is appropriated to kitchen, surgery, ablution-room, sergeants' quarters, purveyor's, and other stores, being partitioned off from each other by wooden bulkheads, 8 feet high. The two floors upon which the sick are treated are capable of accommodating from 37 to 40 patients. The upper floor is used by the purveyor for spare stores; inside the building, on the ground floor, is a watercloset, with means of self-flushing, and outside, in the small yard to the rear, a wooden-seated latrine has been erected (cesspit, emptied by hand). The water supply is ample, and from the town works.

The situation of this building is in a crowded part of the city, for which and other reasons it is not nearly so well adapted for a hospital as those already described.

At the time, however, it was rented, no other more eligible building could be procured in the neighbourhood of the College Barracks.

Water-street Hospital.

This is the hospital in connection with Quebec Gate and Royal Artillery Barracks, and is the property of the Government. It is a stone building, built on the very brink of the river, and some 60 feet above its level, thus commanding a charming prospect, good drainage, and free exposure to the air. It is approached from the town side by Water-street, and is surrounded by a high wall on this aspect; on the water face, a light open railing shuts it in.

It consists of three floors, viz., lower, centre, and attic. In the lower are only two rooms used as wards, the remaining space being appropriated to kitchen, surgeries (two), sergeants' quarters (two), bath-room, steward's and orderlies' rooms, &c.

In the centre floor are 8 wards, 2 of which are large, viz., $22 + 19 + 10\frac{1}{2}$ feet, the remainder smaller in size, $16\frac{1}{2} + 12\frac{1}{2}$, and $17\frac{1}{2} + 20$ respectively.

They are all well lighted and ventilated, by doors, opposite windows, and ventilators; the attic part extends the whole length and breadth of the building, and is used for prisoners, &c.

This establishment is capable of accommodating from 30 to 40 patients at the regulated cubic capacity

Projecting from the first floor, and overlooking the river, is a commanding verandah, for the use of the patients, while the courtyard affords them an agreeable promenade.

In the yard are the latrines, kept well flushed, but rather too close to the main building, the limited space at command not allowing of their being placed at a greater distance. In the back yard, opening into Water-street, is a guard-room, store-room, and dead-house; also other usual offices, all in good sanitary condition. In this hospital the sick of the 47th Regiment and Royal Artillery were treated, since which time the Royal Artillery, Royal Engineers, and Military Train have had sole occupancy of it.

Adjoining is a detached house, formerly the Medical Officer's quarters, but which has recently been used as quarters for the servants of the establishment.

Having thus given a description of the barrack and hospital accommodation at this station, it only remains for me to make a few remarks on the accommodation for married soldiers, the means of amusement and recreation at the soldiers' command, and the means of punishment, viz., military prison and cells.

Married Families.

As a rule, these people are very healthily and comfortably put up, in two large buildings, hired by Government—Franklyn House and an old building in St. Mary-street—while a certain proportion of them find lodgings in different parts of the city out of the lodging allowance granted to them.

The married families of the Guards are well accommodated in the Guards Barracks, as already pointed out, and several families likewise find houseroom in the other barracks of the garrison. Compared with the state of matters at Quebec, the families in Montreal are much better cared for in all respects, and decency more studied in the arrangements made by the authorities for their behalf.

Amusements.

Besides the ordinary games of cricket, ball, &c., in the summer season, and skating and snow-shoeing in the winter, to say nothing of regimental libraries provided for the soldiers at their own, their officers', or Government expense, an excellent Institution has been, during the past year, established in this town by the good offices and voluntary subscriptions of several of the leading merchants, aided by those of the officers of the garrison.

The building, which is in a central situation, is large and comfortably furnished, and contains, besides the garrison library amalgamated with it, a reading-room well supplied with books, periodicals, and newspapers, billiard and bagatelle-tables, &c.

In the basement court-yard, adjoining are a carpenter's shop, two skittle-alleys, jumping-bars, and skating-ground, and the charge is 3*d.* per month to a private soldier. Beer, coffee, and other refreshments (always excepting spirits), are provided on the premises at the wholesale price.

The Institution, I understand, is now nearly self-supporting, from the large number of soldiers (1,800 to 2,000) who contribute to it, and has already branch establishments in connection with it.

The Military Prison.

Previous to the large additional force sent to this colony in the commencement of the past year, the prison accommodation at this station was limited to 10 cells, the prisoners being lodged in a three-storied brick building (as they are in part still, on the associated system), which was built for a naval store in the last American war. A brick building containing 40 cells has been erected in the prison enclosure, in order to meet increased demand for prison accommodation.

The old building is very faulty, the rooms being low, badly ventilated, with a cubic capacity of only about 350 feet per prisoner when full.

The new cells are built on the improved plan in force for such establishments, and open on a central corridor. They afford a cubic space of 610 feet. They are now, after several failures, very well ventilated and heated, under the direction of Staff-Surgeon Moffatt, the Medical Officer in charge

A privy on the cesspit principle (emptied from the outside of the prison enclosure) has also recently been added, as well as a new work-shed ; and a greater improvement still, water, has been laid on from the town works in lieu of what was fetched by the prisoners from the river, and was largely charged with sewage matter.

To render this establishment sanitarily perfect, several desiderata still exist, such as an ablution-room and bath-room, the flushing and draining of the latrines, subsoil drainage of the enclosure, &c., &c., all of which have been recommended to the authorities, and will doubtless be gradually carried out.

The substitution of strong ankle or long boots and woollen stockings for the light thin shoe and sock in the winter season, which was supposed to be a frequent source of coughs and cold, will, it is expected, be attended with beneficial effects on the health of the prisoners.

Such is a brief, and I trust sufficiently, descriptive account of the barracks and hospital accommodation provided for the troops in the larger stations or districts in this command. It only remains for me to glance at the provision made of a like kind at the detached posts on the line of the Richelieu and in the Niagara district, in order to complete this part of the Report, after which I shall pass to the other topics which fall to be considered in their turn.

CHAMBLY—CANADA EAST.

Chambly is a pretty village on the left bank of the Richelieu, about 18 miles from Montreal. During the Rebellion it was a station for a squadron of cavalry, for whose accommodation a series of wooden huts were erected, now in a state of dilapidation.

At present it is garrisoned by a detachment of Royal Canadian Rifles (with their families), and near it are the rifle ranges for the practice of the infantry regiments quartered in Montreal. It is a very healthy spot, its formation resting on Trenton limestone. The soil, though low lying, is well drained and cultivated, there being only a few marshy tracts in the neighbourhood.

The barrack occupied by the men of the Royal Canadian Rifles is a three-storied stone building, somewhat out of repair for want of occupancy, but in other respects is well suited for married families. It has the means of efficient ventilation by doors and windows, and a cubic capacity admitting of the regulated allowance of air to each of its present occupants.

HOSPITAL.

The hospital is a small wooden one-storied building, a quarter of a mile from the barracks, in pretty good repair ; it is capable of accommodating 10 to 12 sick, with the necessary attendants.

The sanitary condition is good.

The men's latrines project into the river, which thus carries away all offensive matter.

The cooking means and appliances are good and sufficient. Washing and bath accommodation rather limited for winter use. In the summer bathing parades take place regularly. The water is perhaps the best in Canada.

ST. JOHN'S—CANADA EAST.

This is a military post on the same river as Chambly, but nearer the United States Frontier. It is 22 miles from Montreal.

During the past year it has been held by two and occasionally three companies of Royal Canadian Rifles.

The barracks, which are of brick and substantially built, consist of 4 ranges or blocks forming a quadrangle, and having in the centre of the square a commodious kitchen and washhouse; they are situated at a distance of about 50 yards from the river. The men's rooms are good, 40 × 20 × 10, well lighted and ventilated, with a cubic capacity of over 500 feet per occupant. The guard-house and cells are commodious.

Kitchen and ablution-room are good and sufficient, and properly equipped. The latrines (cesspits) and urinals are in good sanitary condition, and regularly deodorized. The water supply is from a well in the barrack-square and from the river, and is excellent in quality.

HOSPITAL.

The hospital is a two-storied brick building, about 50 yards from the barracks, equal to the accommodation of about 40 patients, at the regulated cubic space.

The wards are good, well lighted and ventilated; the kitchen, washhouse, dead-house, and other offices in a good sanitary condition.

Although the country around St. John's is low lying, and at one time was a fertile source of intermittent fever, it is now, since it has been cultivated and settled, considered very healthy.

Its formation is alluvial, resting on beds of gravel.

Isle aux Noix.

This is a small island in the Richelieu River, about one square mile in extent, 35 miles from Montreal, and 12 from St. John's, and 12 from the boundary of the United States.

The soil is sandy and loamy, at points round the margin somewhat marshy.

The site on which the fort stands is about 8 feet above the level of the river, the ground here being artificially raised by means of wood piles and earth. The fort (Lennox) is situated on the most elevated part of the island, towards its north-western extremity.

It was constructed to hold 300 men; its present garrison is about one-third of that number.

The barracks in which the men are placed consist of a long range of two-storied solid stone buildings, running parallel with the river; the casement is appropriated to married men and their families, the upper floor to the unmarried soldiers; the latter comprises two large rooms, well lighted and ventilated by means of opposite windows (16 in number) on each side, and doors with loopholes at each end, communicating directly with the open air, affording cubic space per man of 2,000 feet at the present ratio of strength.

The construction and capacity of the basement floor are in all respects the same.

There are two excellent kitchens for the cooking men's meals, one only of which is at present used, and is provided with a good bakehouse attached; the second kitchen was converted into an ablution-room, but, being found unsuited for the purpose, a new ablution-room is in the course of erection, which, with bathing parades twice a week, have the effect of securing perfect personal cleanliness.

The latrines are cesspits, and emptied by hand, and freely deodorized; the subsoil drainage is defective. The guard-room and cells (four in number) are sufficiently commodious, well ventilated, and in a good sanitary state.

The water supply is derived from wells and from the river, and is of excellent quality.

HOSPITAL.

The hospital is a detached wooden building, situated outside the fort, near the river, in a comparatively low locality.

It is constructed to hold about 30 patients at the regulated cubic allowance. On the ground floor are two large wards for 10 patients each; the two attic wards hold five each; each ward is lighted and ventilated by opposite windows, two on each side, and by doors.

The hospital cooking, washing, and latrine arrangements are very satisfactory.

There is a good canteen here, under proper surveillance.

In the early part of the year a company of the 47th Regiment was stationed here, The garrison duty has latterly been done by the Royal Canadian Rifles.

Niagara, Canada West.

The isthmus on which the town of Niagara stands has been long occupied as a military post, and been the scene of some stirring military operations.

The barracks are Fort Missisigon, Butler's Barracks, Stone Barrack, and the Upper Ferry Barrack. The first is a sunk star fort, surrounded by a dry ditch, containing a bomb-proof tower; Butler's is a wood building, two stories high, containing four rooms for 25 men each; the Upper Ferry and Stone Barracks are not at present occupied. The cubic capacity of the men's rooms is 485 feet per man; they are well lighted and ventilated; the cooking and washing arrangements are defective.

HOSPITAL.

The hospital is a substantial stone house, not far removed from any of the barracks, standing in its own ground, and has accommodation for 25 patients at the regulated amount of cubic space.

The kitchen, washhouse, and other offices are in a good sanitary state.

This post is held by a company of Royal Canadian Rifles.

Saint Catherine's—Port Dalhousie—Dumville.

These are posts in Canada West, held by small detachments of Royal Canadian Rifles, from 40 to 50 men each.

The men at Saint Catherine's are accommodated in a two-storied brick building (formerly iron works), one large room, 77 × 32 × 12, composing each floor, well ventilated by 14 windows on each side. The means of cooking and washing is defective.

HOSPITAL.

Opposite is a small two-storied house hired for a hospital, and capable of accommodating 10 sick. It has kitchen, washhouse, and the other necessary offices. Both buildings are in good sanitary condition.

At Port Dalhousie the barrack is a new wooden erection, and at Dumville a private house hired for the purpose, both of which answer the purpose sufficiently well—the families which cannot be accommodated in barracks being granted the usual lodging allowance.

Ottawa.

For a few weeks a small detachment of Royal Canadian Rifles was stationed at Ottawa, but, the Government accommodation being insufficient, and out of repair, it was finally withdrawn.

Rations.

The rations in this command consist of 1 lb. of fresh meat and 1 lb. of bread daily, beef and mutton being issued on alternate days, and since October last salt meat once a week; the latter appears to be much relished by the men.

Vegetables are to be had in abundance, and throughout the year at all the stations, and at very moderate prices.

At Montreal the Commissariat have recently established a bakery, which turns out excellent bread. At the other stations it is furnished by contract.

Spirits and beer (especially the former), with but one exception, are bad in this country, and often largely adulterated; both are unfortunately very cheap, a glass of either costing 2 cents, or 1*d.* sterling. The cheapness of those articles, especially a vile species of whiskey called "white eye," is the cause of much of the sickness and crime which occur in the Command.

Canteens.

In the canteens the beer sold is of excellent quality, and moderate in price. These establishments, generally, are under good surveillance, and well managed, there being separate accommodation provided for the non-commissioned officers at most of them; great care is taken that they are at least well ventilated, if they are sometimes restricted in space for the numbers making use of the rooms.

Clothing.

The clothing of the men in this country is good and well adapted to the extremes of climate. The bedding also is sufficient, and of good quality.

Heating and Lighting.

The barracks in the winter season throughout the command are well heated by means of stoves, and the supply of wood provided for them is liberal. They are for the most part very badly lighted, candles of very inferior quality being the regulated issue.

In the hospitals at all the large stations, coal-oil has been recently introduced, with manifest advantage to the sick and economy to the Government, considering the increased comfort and convenience; and it is to be hoped that before another season this boon will be extended to the men in barracks, it being now generally admitted that a comfortable barrack-room is one of the most potent safeguards against the attractions of the low pot-houses outside, and therefore a valuable reformatory agent.

Duties.

The duties performed by the troops are the usual drills, parades, guards, and pickets. In the winter season the men march out once a-week, and also are exercised with snow shoes.

The number of nights in bed throughout the command may be set down at eight or nine.

The rifle practice takes place at the different stations from May to August, when generally the men are under canvas.

With exception of Grimsby, near Hamilton, Canada West, where the Rifle Brigade had their ranges, the selected localities have proved very healthy. In the case of Grimsby, a few cases of sharp remittent fever (with two fatal results) were supposed to be due to a neighbouring swampy arm of the lake, which has led to a change of ground for next season.

Crime.

The amount of crime, considering the strength of the force in the Command, and the many temptations to which the troops are exposed, must be considered as small. Eight men only have been admitted to hospital on account of punishments in the course of the year.

The instances, however, of the more grave criminal attempts on the lives of their superior officers by shooting, on the part of several misguided men, and which ended fatally in three cases, must be excepted. For these attempts one suffered death, and one transportation, and one verdict returned the man "Insane."

It is difficult to offer any satisfactory explanation of the causes which lead to criminal acts of this kind, at times almost epidemic in character. One thing, however, is certain, that a drumhead court-martial and speedy execution is the surest method of putting a stop to psycological manifestations so unintelligible yet so alarming in their results.

Purveyor's Department.

The whole of the hospitals in the command are in the hands of Principal Purveyor Morris, and I am glad to say that nothing could be more satisfactory than their condition, whether as regards equipment, culinary arrangements, stores, provisions, &c.

Judging from a year's experience of the working of these establishments, I should say, that in this Command two out of the five Orderlies apportioned permanently to each battalion as attendants on the sick might be dispensed with, but no discretionary power exists with the local authorities to make any change in this particular.

Apothecary's Branch.

The Army Medical Stores at Quebec in the charge of Apothecary Harvey are kept in excellent condition, and the supply in advance of all ordinary demands.

The Surgeries in each hospital throughout the Command are in a very satisfactory state, well supplied with medicines and medical comforts. Dispensing at the majority of the regimental hospitals is done by Sergeant Compounders, who have passed the usual examination, and receive 1*s.* per diem extra for the performance of this duty.

Surgical Instruments.

The surgical instruments in possession of each Surgeon of a Regiment are in good condition, and strictly in accordance with the requirements of the Army Medical Regulations.

The Assistant-Surgeons have in their possession (provided at their own expense) a pocket-case of instruments and lancets.

Upon the whole, then, it will appear, from this detailed statement, that the troops in this Command are, as a rule, well housed, fed, clothed, and placed in conditions for maintaining their health and efficiency. When sick every provision is made for their recovery, and speedy restoration to the ranks. What is chiefly wanted is an extension of the means of abating drunkenness, by means of institutions, ball courts, and other rational amusements, time hanging heavy on the soldier's hand, especially in the winter season. At some stations, too, better accommodation for the married people is desirable.

It is gratifying to state that every reasonable suggestion made to the military authorities by myself or other Medical Officers on sanitary grounds, has met with the most prompt and cordial consideration.

SANITARY HINTS FOR THE TROOPS ABOUT PROCEEDING "OVERLAND" TO CANADA.

1. The strictest sobriety to be observed, as men require all their faculties, and the utmost care to prevent "Frost-bite."

2. As much clothing as possible to be worn when sleighing.

3. During travelling in sleighs the men should be frequently ordered to walk or run, to promote and maintain circulation, &c.

4. If any portion of the body, as the feet, hands, nose, or cheeks, &c., becomes insensible, or devoid of feeling, and if, in addition, it becomes *white* and hard, it may be inferred that the part is "Frost-bitten;" in that case on no account should the man approach a fire; on the contrary, the part should be gently rubbed with snow or ice water until sensation gradually returns.

5. Breakfast with hot coffee or tea should be issued to the troops before starting in the morning, and hot coffee or tea on arrival at their destination. To carry out this, a sufficient number of men, as cooks, with the necessary appliances, should, if practicable, precede the detachments, so as to have all arrangements made.

6. The attention of Medical Officers is particularly directed to the means to be adopted to prevent "Pneumonia," a disease not only to be expected and guarded against during the journey, but also after the troops have arrived at their destination in Canada.

W. RUTHERFORD, M. D.,
Deputy Inspector-General and Sanitary Officer.

St. John, N. B.,
7th January, 1862.

REPORT ON THE EPIDEMIC VISITATION OF CHOLERA IN THE 93rd SUTHERLAND HIGHLANDERS IN 1862.

By William Munro, M.D.

During the past eight and a-half years the 93rd Sutherland Highlanders, as a body, has been healthy, though subjected frequently during that time to the casualties of war, and to the diseases consequent on the privations, exposure, and fatigue which attend war.

Twice during this period cholera has been epidemic in the regiment; once in Bulgaria in 1854, and lately in India, during the months of July, August, September, and October 1862.

In June 1857 the regiment embarked at Portsmouth for foreign service, 1,070 strong, in three ships, 713 in one, 300 in a second, and 57 in the third. Out of this number only 1 died during a voyage to Calcutta, averaging a little more than three months. 1,069 landed in Calcutta, and of this number only 7 died of disease during the first six months of our service in India, viz., from 1st October, 1857, to 31st March, 1858, though exposed to the vicissitudes of climate, great and rapid alternations of temperature, and to the fatigues of war.

At the time of embarkation the height of the men of the regiment averaged 5 feet 7½ inches; the circumference round the chest, 37 inches. There were 450 Highlanders, from the districts of Perth, Inverness, Aberdeen, and Sutherlandshire; 544 Lowlanders from Edinburgh, Glasgow, Dundee, &c.; 25 Englishmen, and 51 Irishmen. It may, therefore, be presumed that at that time the regiment was composed of a strong and vigorous class of men.

During the second period of six months of our service in India, viz. from 1st April to 30th September, 1858, the amount of sickness and mortality in the regiment was considerable; but during the months of April, May, and June, when the heat of the Indian sun is truly awful, and when the wind blows over the parched and heated surface with a withering intensity, the corps was in the field as part of the force that expelled the rebel enemy from the district of Rohilcund. This was a period of great suffering; many men died of heat-apoplexy, and all became weak and exhausted from the intense heat, and want of sleep. In July 1858 the regiment occupied temporary quarters in Bareilly, Rohilcund (the gaol there having been converted into a barrack), and from that date till the end of September there was a great amount of sickness amongst both officers and men. No doubt some of that sickness might have been avoided in these months; but we were new comers, fretted under confinement to the house, and did not understand the wisdom, nay necessity, of avoiding exposure to the scorching sun and withering winds; and thought that, having lived in tents, and almost in the open air, through constant exposure during the three hottest months, we might continue to expose ourselves with impunity, forgetting that all that exposure had weakened us considerably, and that the excitement of the campaign had ceased. Our quarters in the gaol were neither comfortable nor healthy. The gaol was situated on a bed of sand, the buildings crowded and shut in by a wall, and the men were too closely packed together; but our occupation of the gaol was unavoidable, and was better than exposure in tents.

About the end of September and beginning of October 1858, the weather became cool, the men rapidly regained strength, and the regiment again took the field, as part of one of the columns that entered Oude, for the expulsion of the rebels, and moved in pursuit of the enemy as far as the Kowrian river (one of the tributaries of the Gogra) to within about twenty-five miles of the Nepaul frontier, from whence, in February 1859, the corps commenced its march towards Subathoo, a hill station in the Sirhind district, and, after a march of 500 miles, reached its destination on the 13th April, 1859.

Within two years from date of landing in India, the regiment had traversed an immense tract of country, marched upwards of 2,000 miles, had been present at the relief of the Residency of Lucknow, the relief of Cawnpore, defeat and pursuit of the Gwalior Contingent, the siege of Lucknow, several minor engagements, and had served through a hot weather campaign.

The percentage of sickness to strength during the first six months of service in India was .... 38·20
During the second period of twelve months .... 176·91
During the third period of six months .... 63·07

The percentage of deaths from disease to strength during the same period was—

1st .... 1·51
2nd .... 8·36
3rd .... 1·38

The regiment remained at Subathoo for six months, from thence moved to Umballa, the head-quarters of the Sirhind district, in November 1859, and from thence to Rawul Pindee, in the Sind Saugor District, in January 1860, arriving there on the 9th March of the same year.

In this station, considered one of the most healthy in India, the regiment remained twenty months, and there, in 1860, the percentage of admissions to hospital to strength was .... 113·53
The percentage of deaths .... 1·24
In 1861 the percentage of admissions to strength.... 124·17
" " deaths " .... 0·73

During the hot weather of 1861 cholera swept off numbers of the European troops at Lahore, which is only 140 miles south-east of Rawul Pindee. Fortunately the pestilence did not appear in Rawul Pindee, but all preparations were made there for an exodus of the troops in the event of its appearing.

In November 1861 the 93rd moved to Peshawur, and arrived there on the 22nd of the month. Early in October a wing of the regiment had been moved to Campbellpore, a station close to the east bank of the Indus, and about fifteen miles from Attock. This wing joined head-quarters at Peshawur on 23rd November of the same year.

From this date up to the beginning of July 1862 the regiment was healthy, though a number of those men who had been at Campbellpore (and those only) suffered from intermittent fever immediately after arrival in Peshawur. In June 1862, and up to July 7th, the 93rd was the healthiest corps in the Peshawur garrison, and when Major-General Sir S. Cotton, K.C.B., visited the hospital on the 1st or 2nd July, there were only 44 men in it, no convalescents in barracks, and the prevailing disease was simple remittent fever.

Peshawur is the most remote of our Indian possessions, occupying the north-west corner of the Punjaub.

It is an extensive valley, containing upwards of 2,000 square miles, completely surrounded by lofty mountains, and traversed by three principal rivers, the Bara, Cabool, and Swat.

The two last form extensive jheels (or marshes), one of which, miles in extent, is close to cantonments. The first-mentioned river, the Bara, supplies the station and city with water for all purposes of domestic use and irrigation, and its waters are led into cantonments through artificial channels that traverse every street, pass close to all public buildings, and run through every garden or compound. These channels are simply ditches, and in most instances are on a plain higher than the foundations of the houses ; they are neglected, dirty, frequently choked up with mud, which is often exposed to the sun for hours and days, when the water is cut off from one locality, and turned off in another direction. There are miles of these ditches within cantonments, and one of the largest and dirtiest runs close past the barracks and hospital, which were occupied by the 21st Hussars, and also close past the barracks occupied by the 93rd, its bed being higher than the foundation of the barracks.

The Artillery Barracks are almost inclosed by such ditches. A considerable stream from the same river flows through the city of Peshawur, which the inhabitants use for domestic purposes, and into which all kinds of filth are thrown, and which appears to act as the main surface drain of the city.

There are many acres of land cultivated in the valley, but there is no permanent vegetation; scarcely a tree to be seen throughout the whole vast plain, except in and immediately round cantonments, and at Jaloozai, near the base of the Cherat hills.

The climate of Peshawur in winter is very cold, sharp, cutting winds sweeping over the valley from the lofty mountains to the north; heavy rain also generally falls in December or January. During the hot season the air is still (comparatively) and oppressive during the day, followed by damp, chilly nights. At the commencement of the hot season westerly winds prevail; later in the season southerly and westerly. Dust storms are not of frequent occurrence, nor are thunder storms, and when these do occur they are generally attracted to the surrounding mountain ranges.

Seasons appear constantly to vary, as, during the hot weather just passed, very little rain fell, while, in the same season of the previous year, immense falls of rain occurred.

The average of the thermometer during the cold months is 54°, the minimum is 43°, and the maximum 57°.

The average during the hot months is 89°, the maximum is 96°, and the minimum 78°.

The position of the district, surrounded as it is by lofty mountains (with only one outlet, where the Cabool finds its way out of the valley to the Indus), the immense quantity of water which both flows through and stagnates in the valley, the abundant annual vegetation, and the constant evaporation from the surface, must all be fruitful sources of morbific (or malarial) influence, and we do find that fevers of different types are prevalent.

The intense and constant still heat of the hot season debilitates the system to an unusual degree, and renders it not only incapable of resisting morbific (or malarial) influence, but also of withstanding the great and sudden alternations of temperature which take place during the rainy months, and in the months of October and November; consequently, besides remittent and intermittent fevers, there is a form of remittent fever ushered in by collapse, diarrhœa, or vomiting, ending in congestion of brain, lungs, liver, &c., very prevalent in the valley.

Europeans and natives are alike, and equally liable to fever, and even the inhabitants of whole villages have been known to abandon their homes for a time, driven out by the terror of an epidemic.

The cantonments run nearly east and west; the barracks and Native Infantry lines form the northern face, the city the southern; and the officers' quarters and bazaars are between.

The barracks are quite exposed, there being no trees or protection of any kind from the cold winds of winter, or from any morbific (or malarial) influence that may arise in that portion of the valley which lies between the station and the mountains.

Trees planted by the 21st Hussars and 93rd round their respective barracks, will in time afford shelter from the cold winds, from the effects of damp, and from malarial poison.

To the north-east and south-east are extensive marshes, and large tracts of cultivated land, also the Cabool river running north and south; but nothing to protect the station from the easterly winds, or from the damp and malarial influences which must be generated in so large a tract of open, bare surface, saturated with moisture.

To the south-west are extensive orchards, filled with peach and apricot trees, and beyond this again extensive bare plains, stretching towards the base of the mountains. Within the station rows of trees line every road or street, and all officers' houses are imbedded amongst trees and shrubs, and surrounded by permanent grass plots.

The barracks occupied by the 93rd, called the Right European Infantry Barracks, are built partly of fire-dried and partly of sun-dried brick; the floors in some are paved with brick, in others not. There are twenty distinct buildings, placed in double rows of echelon, every pair of buildings connected by a covered verandah. They are all very well ventilated by doors and windows, and by air-holes and ridge ventilators. In each building there are two centre rooms, with double verandahs on both sides. Each building is divided into two rooms, and each room is fitted for 25 men. Small rooms for serjeants or married men are at the corners of each building; the ablution rooms are merely corners of the outer verandahs partitioned off.

The cook-houses are wretched sheds, built on the upper or south side of the barracks, close to the stream of water that flows past the barracks, and immediately on the other side of this stream are the privies. The whole barracks are on a spot of ground that slopes gradually down towards a nullah, which extends along their north face about 500 or 600 yards distant, so that surface drainage is good.

The hospital is of similar construction, consists of two wings and a centre building. It is well ventilated by doors and windows, and also by air-holes below. The floors are paved with brick. There is a large space (or compound) round the hospital, at one time inclosed by a high mud wall. This compound was laid out as a garden, turfed, and planted with trees.

There was nothing objectionable about the hospital except the high wall surrounding it; but, at my urgent request, this wall was thrown down. The surface drainage near the left wing of the hospital also was very imperfect.

Altogether it was the best hospital, as far as situation and arrangements were concerned, in Peshawur. There were no cesspools, the privies were all kept perfectly clean, and the urinals were on the Government standard plan.

I have already stated that, during the first half of the year 1862, the 93rd was very healthy. On 7th July, however, cholera made its appearance in the regiment, became epidemic, drove us eventually from the station, and followed us until we passed out of the valley.

Early in April 1862 information reached Peshawur that cholera had broken out in the district of Bunnoo, supposed to have extended to this district from the mountain regions inhabited by Wuzeerie tribes, to the west of Bunnoo.

Numbers were reported to have been swept off in the town of Bunnoo, and also in the villages throughout the district; and the disease, gradually spreading from village to village, appeared amongst those in the southern Kuttuck tracts of the Kohat district, which border on the great plains of Bunnoo, inhabited by Wuzeerie nomades, and extending in a south-westerly direction to the banks of the Khoarum river.

The first cases in the Kohat district occurred in a town called Terci, the capital of the western Kuttuck range of hills, from whence the disease gradually extended in a north-easterly direction throughout all the villages in those ranges of hills which separate the Bunnoo and Kohat districts, and stretch eastward to the Indus. After hanging about this mountain district for several weeks, the disease disappeared from that quarter, but continued to range amongst the Wuzeerie tribes to the southward and westward, and also suddenly appeared in some villages on the border of an extensive valley (the upper Meranzai) fifty miles due west of Kohat, but in a few days disappeared suddenly from that locality, and not a case occurred there afterwards.

No case occurred in the cantonments of Kohat until early in June, one month after its disappearance from the range of hills on the south and south-west borders of the district. The first cases in the garrison occurred in one of the Native regiments, which was at once marched out and encamped close to a village about three miles from the station; and almost immediately afterwards cholera broke out in this village, and in several others in the immediate neighbourhood.

Not many days after removal of this regiment, cholera broke out in the others in garrison; all were immediately marched out of the station, and encamped at distances varying from twelve to twenty-four miles, and, at the same time, the first regiment mentioned changed ground, and encamped at a considerable distance from its first position.

By these measures the disease seemed to have been arrested, and early in

August the troops returned to cantonments. No fresh cases occurred subsequently in any of the corps, except in that which had been first attacked; it was a second time moved out into camp.

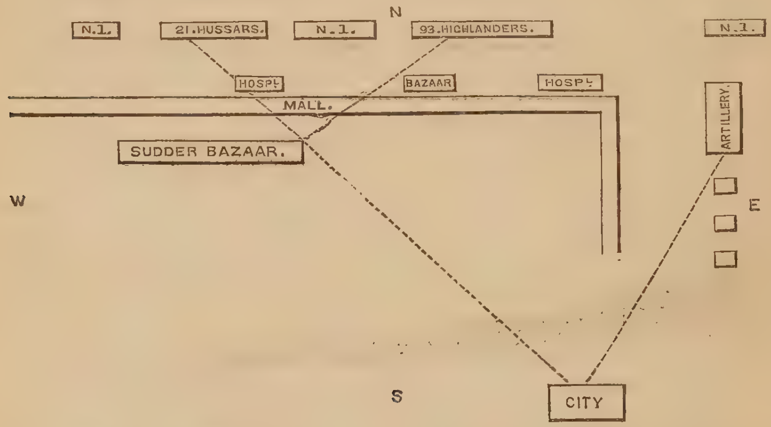
From Kohat the disease gradually extended through the villages in the Kuttuck and Affreedie ranges, to the north-east of Kohat, and forming the south-west boundary of the Peshawur valley.

In May and June the weather was close, hazy, and stifling, occasionally relieved by thunder-storms, and heavy showers with lightning. In September and October there was a clear sky generally; great heat and glare, and little rain or thunder.

Early in June, indeed almost simultaneously with the appearance of the disease in Kohat, cases were reported in the city of Peshawur, and one was reported at Shubkudder, a fort about fourteen or fifteen miles north-east of Peshawur, and on the east side of the Cabool river; but it appeared that the sufferer, a native soldier, had come over from Kohat, and that, immediately on arrival at Shubkudder, he was seized with cholera.

From the city of Peshawur the disease seemed to extend in two straight lines almost at the same time north-east and north-west—in the former instance towards the gaol and Artillery Barracks, and in the latter, towards the Sudder Bazaar and Barracks occupied by the 21st Hussars, in both instances passing over the officers' lines, which are situated between the city and different barracks. The last barracks in which the disease appeared, was that occupied by the 93rd Highlanders, which lies between that occupied by the Artillery and Hussars respectively

This diagram will explain—



I have not been able to trace with any certainty the course of the disease beyond (that is, south of Bunnoo). It was reported as prevalent lower down in the Deragat early in April; but of its origin there, or course from thence to Bunnoo, I have not been able to obtain the same reliable information as of its appearance and prevalence in Bunnoo and Kohat, which was supplied me by Captain Munro, Deputy Commissioner at Kohat.

From what I have stated, therefore, it would appear that the choleraic influence (or atmosphere) travelled in a north-easterly direction from Bunnoo to Peshawur, and that it was confined to the districts west of the Indus. I am unable to give even an approximation to the rate or speed at which the atmospheric influence travelled. The course of the epidemic, however, was remarkable in that it appeared at certain points in a direct line nearly north-east of each other, and from these radiated east and west, disappearing suddenly from certain spots for days, and even for weeks, and then re-appearing in some instances with greater virulence than formerly. This was very remarkably shown with respect to the visitation in the 93rd Highlanders.

I have said that about the middle of June (some say earlier, the 9th), but I believe that true cases of cholera did not appear in the city of Peshawur before the middle of June, and, in a few days after its first appearance there, the number of cases reported was very considerable. It is doubtful, however, if all cases were really cholera. As many as 60 were reported in one day, and the greatest number of deaths I heard of was 27. The proportion of deaths to recoveries supports what I state, and raises the doubt almost to certainty that all cases reported were not true cholera.

The strength of the 93rd Sutherland Highlanders present in Peshawur on 1st of July, 1862, was as follows:—

Officers, 23; men, 948; women, 79; children, 99.

The night duties at Peshawur were not severe, the regiment furnished only four guards altogether, numbering 99 men, and the average number of nights in bed was six.

The parades were few in number, held early in the morning and late in the afternoon, and after the 1st of May there was little or no drilling. There was an evening parade for rope drill up to beginning of July, but this was discontinued at my request after that date. Men were not kept long on parade, and the ground on which they paraded was always perfectly dry. Strict orders have always existed in the regiment forbidding men to expose themselves to the sun, and hours specified after which no one was to be out.

Light cotton clothing was worn by the regiment; but all night duties were mounted in red serge frocks at my recommendation, as the night air in Peshawur valley is always loaded with moisture. Flannel belts were worn by all.

The rations during the year were as good as any I had ever seen in India, and extra articles of diet were purchased by the men themselves, according to messes.

No men slept in verandahs, as there was ample accommodation under the main roof, and there was scarcely any possibility of men walking about in wet clothes, as there was so little rain during the season.

Beer, porter, and rum were issued from the canteen. During the hot months beer and porter were issued for the dinner meal, men who wished either giving their names to the orderly serjeant of their companies, who drew the quantity for all, and served it out to the men in their barrack rooms. This was done to avoid exposure to the sun. In the evening men went for and drank their ration of rum at the canteen. The canteen was comfortless, and held out little inducement to men to remain in it.

There was an excellent reading room established in the barracks by Colonel Ross, and superintended by the chaplain, the Rev. H. Drennan. It was kept up by voluntary subscription, and at one time the number of subscribers amounted to upwards of 400. In this place of recreation the men had books, newspapers and different periodicals, also games as chess, backgammon, drafts, &c., for their amusement and occupation. There was also a coffee-shop and smoking-room attached to the reading-room.

There was a theatre in which a certain class of men took much interest; but I do not think the lovers of the drama generally were the most steady characters in the regiment.

Country liquors were never allowed in either the canteen or bazaar. In the latter ginger-beer was made and sold. It was often inspected by the quartermaster and by myself, and only on one occasion had I to find fault with it, and then with the water, and not the other materials of which it was made.

At all times in the regiment we have endeavoured to pay the strictest attention to sanitary arrangements, so that no extraordinary preparations were left to be made in anticipation of the advent of cholera.

Almost immediately after arrival in Peshawur the privies were altered to the Government standard plan, and some improvements added, such as air-tight receptacles, made on a plan proposed by Surgeon Ross, 21st Hussars; and the moveable iron urinals were put in use also. All cesspools of every description were done away with, and water from the ablution rooms carried off, and led by surface drains (which I proposed should be paved, but which was not done) to the little gardens about the barracks cultivated by the men.

The old ground which had been used as a place of deposit for night-soil was abandoned, a new piece at a greater distance from barracks selected, and the rotation system of pits (as proposed by myself) introduced.

The same arrangement of privies and urinals were introduced for the hospital. Trees were planted at my suggestion, and under my superintendence all round the barracks, and along the water courses in the vicinity. Tanks with filters, much needed, were ordered and eventually made; and temporary filters besides were erected in the outer verandahs of every barrack room, and the water made to pass through both sand and charcoal.

Such were the principal arrangements made immediately after our arrival at Peshawur in and about the barracks and hospital, not in the expectation of the appearance of cholera, but as necessary improvements, so that when cholera did make its appearance, there was nothing left to be done but to maintain our system of sanitation; and the following old orders were repeated, and strict attention desired to be paid to them:—

"Doors and windows to be kept constantly open, so as to ensure a complete removal of all offensive smells or foul air. Beds and bedding to be taken out twice a-week, shaken and aired, and the walls of the rooms swept. Men to be prohibited sleeping in the open air or outer verandahs, privies to be more carefully swept and cleansed, all filth to be removed as quickly as possible, and the iron pans to be cleansed with quicklime; the use of fruit prohibited, as tending to produce diarrhœa; men warned to report the least feeling of indisposition; and non-commissioned officers ordered to send to hospital, without delay, men complaining of feelings of weakness or uneasiness, or those who visited the privies more than twice.'

The hospital arrangements at all times existing in the regiment are as follows:—Medical and surgical divisions. The medical portion divided into—1st. Diarrhœa ward. 2nd. Fever ward. 3rd. Other medical cases ward.

The surgical portion divided into—1st. Ophthalmic ward. 2nd. Accident ward. 3rd. Syphilitic ward.

Immediately before the appearance of cholera one large ward No. 1 (the diarrhœa ward) was shut off from the rest of the building and prepared for reception of cholera cases, and the inner verandahs were converted into observation wards for cases of diarrhœa.

Stimulating, aromatic, and astringent mixtures were prepared, and minute instructions given to the apothecary, and other subordinates, to report any or all suspicious cases. A small room also was prepared for the reception of women who might be attacked by the disease.

European orderlies were placed in each ward in the hospital, and a European matron appointed for the female ward. The old bedding and hospital clothing were picked out, old cots were obtained, and bags got ready for heated sand.

On the appearance of cholera in the regiment, the following regulations were made by me:—One medical officer to be on duty in the hospital day and night; one medical subordinate officer to be constantly on duty in the cholera ward, and changed every six hours; one European orderly to be constantly on duty in the cholera ward, and changed every twelve hours; another orderly to be on duty, changed every twelve hours, for the rest of the hospital; this latter orderly to move about the different wards constantly, and report any cases showing symptoms indicative of either diarrhœa or cholera. Two fatigue-men to be given from the regiment for every case of cholera, and these fatigue-men to be changed every twelve hours.

Such were our arrangements from first to last, and never for a moment was there the least hurry or confusion throughout the whole prevalence of the epidemic.

I beg here to bear testimony to the zeal and devotion of Assistant-Surgeon Bouchier, who was with me throughout the whole epidemic visitation; also of Assistant-Surgeon Archer, 98th Regiment (sent up to assist us); also of Assistant-Surgeon Dr. Baxter, who joined towards the middle of October before the regiment went into camp; and of Assistant-Surgeon Hope, who fell a victim to the pestilence; also of the faithful conduct of the medical subordinate officers, the Hospital Serjeant John Corbett, the orderlies, and fatigue-men. The matron too was most kind and attentive in the performance of her share of the duties.

On the 1st or 2nd of July one or two cases of cholera occurred in the Sudder Bazaar amongst the native inhabitants. On the 4th two cases occurred in the hospital of the 21st Hussars, and then cases occurred in the barracks of this regiment. About the same time cases occurred in the Artillery Barracks, and on the evening of the 5th a woman of the 93rd was admitted to hospital with diarrhœa, which terminated in cholera. This woman came from the Artillery Barracks, the Company No. 8 to which her husband belonged being in one of the buildings of this barracks.

This distribution of the regiment at this time was as follows:—Seven companies (1, 2, 3, 6, 7, 9, 10) in the head-quarters barracks, two companies (4 and 5) in the barracks occupied by the 21st Hussars, and one (No. 8) in the Artillery Barracks.

On the 7th July a case of cholera occurred in the regimental bazaar (93rd), and on the same evening the first case amongst the men of the 93rd Sutherland Highlanders was admitted to hospital. The 93rd, therefore, was the last of the three European corps in garrison in which cholera appeared.

Previous to the appearance of cholera, I have already stated, the regiment was healthy, there being on the 1st July only 44 men in hospital (or 4·64 per cent.), and these chiefly for common (remittent) fever. There were no cases of diarrhœa, nor had there been during the previous month; but the moment the first case of cholera occurred in the corps, choleraic diarrhœa and cholera both became the prevailing diseases, and fever for a time almost entirely ceased.

Soon after cholera appeared in the 21st Hussars and Artillery, these corps were moved into camp; the former on 15th of July to Jaloozai, nineteen miles distant from Peshawur, and the latter to the Bara Fort, nine miles from Peshawur; but the 93rd Highlanders were retained in Peshawur, as the civil authorities did not deem it prudent to send all the European troops out of the station.

However, on the 11th July, 100 men (93rd), viz., No. 8 Company from Artillery barracks (that in which the disease first appeared), and some weakly men were sent to Cherat, a spot in the Kuttuck Hills, due south of Peshawur, and 3,000 feet above the valley. Again, on the 14th July, 100 men, viz., No. 5 Company, from the 21st Hussars Barracks, with more weakly men, were sent to Cherat. This reduced head-quarters to 748 men, and enabled us to vacate barracks in which the disease first appeared.

Again, on the 19th July, 61 more men, debilitated by fever, were despatched thither; on the 6th August, 50 additional; on the 22nd August, 59 men were despatched; on the 11th September, 32 men; and on 23rd Septembe,l 41; so that up to the end of September, 443 men had benefitted by the coo atmosphere of this high altitude. Of this number 247 returned within the same period.

There were four separate or distinct outbreaks of cholera in the regiment. The first commenced on the 7th July, and terminated on the 17th July, and during this outburst, there were 15 cases of cholera, and 22 of choleraic diarrhœa, none of which latter terminated in cholera.

The second outbreak commenced on the 26th day of July, and terminated on 10th August. In this outbreak there were 12 cases of cholera, and 29 of choleraic diarrhœa, of which latter 2 terminated in cholera.

The third commenced on the 9th day of September, and terminated on the 16th day of September. In this outburst there were 9 cases of cholera and 2 of choleraic diarrhœa, of which latter none terminated in cholera.

The fourth commenced on the 12th day of October, and terminated on 3rd November, the day the regiment made its exit from the valley of Peshawur.*

The first commenced in the company quartered in the Artillery Barracks, the second in No. 6 Company in the Head Quarters Barracks, the third in the left wing of hospital and in the left corner of the female hospital, and the fourth commenced in the camp on the regimental parade-ground.

After the first outburst the 1st and 2nd Companies, in which cases occurred, where sent to Cherat. After the second outburst the companies were moved out of the head-quarters barracks and encamped on the regimental parade ground. On the third occasion, when the disease broke out in the left wing of the hospital, that portion of buildings was vacated and the sick were put into tents, and in several days afterwards the hospital was abandoned altogether (as two cases occurred in the right wing of it); all the sick were now taken into camp, near to the regimental camp on the parade ground.

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* In which outbreak there were 57 cases of cholera at head-quarters and 6 absent.

During the first and second outbreaks there was a cessation of fever; but during and after the third, and during the fourth outbreak, there was an increase of remittent fever, and, after the disappearance of cholera, intermittent fever became the prevailing disease.

In July and August the weather was hot and oppressive, with southerly and westerly winds, and occasional heavy showers of rain, and the first and second outbreaks of cholera took place after the rain.

In September and October the weather continued hot and oppressive by day, followed by damp chilly nights. And the fourth outbreak was immediately after a severe dust storm from the north-east.

In each successive outbreak the disease was of a more virulent character, and choleraic diarrhœa was far more prevalent during the first and second than during the third and fourth outbreaks.

Our first cases admitted to hospital were persons who occupied small rooms at the ends of the large buildings.

The percentage of such cases to the total number treated was 9·67.

The companies which suffered most were 3, 6, and 8, and that which suffered least was No. 4, which occupied one of the two mud-built buildings in the barracks of the 21st Hussars; indeed this company was quite exempt from the epidemic influence during the first, second, and third outbreaks. Not a case occurred in this company until after the departure of head-quarters from Peshawur, and not until it left the shelter of a roof and encamped on the regimental parade ground.

This company was left in Peshawur as a protection to the Station, and to the families; and with the heavy baggage of the regiment.

Close to the building of the Artillery Barracks, in which our first case occurred (the woman), were two large water-courses; and the second building, in which cases occurred, was close to the hospital, 21st Hussars, and to a large dirty stream of water.

The greatest number of cases occurred in men 25 years of age, and in those who had been longest in India.

The proportion of non-commissioned officers attacked was less than of either officers or privates.

Only one bandsman and one piper were attacked by the disease.

As long as the regiment remained in Peshawur the officers, shut up within their well wooded compounds, escaped entirely; but, almost immediately after going into camp (three days) in October five officers were attacked by the disease, and of these four died.

The women and children suffered much; out of nine women, who had cholera while head-quarters remained at Peshawur, six were far advanced in pregnancy (the 7th and 8th months). One had just been confined, one was the mother of several children, and one had never had a child. Six died in a stage of collapse, one died from exhaustion after convalescence, one died in the stage of congestion, and one (the woman who never had a child) recovered.

The other women who had cholera were taken ill after the regiment left Peshawur.

Four boys above 7 years of age had cholera, 1 died and 3 recovered; 11 children under 2 years of age were attacked, and only one recovered.

The percentage of women attacked was 21·51, of children 15·15.

The number of men, in hospital with other diseases, attacked was 23, an the percentage of such to the total number of men treated 24·73. Of these 23 men 16 were ill with fever, and 4 were admitted with choleraic diarrhœa, 2 under treatment for hepatic disease, and one for debility.

The average duration of fatal cases was 41 hours, and of recoveries, including convalescence, 140 hours.

Only one man was taken ill while on guard, and only two were brought or rather came to hospital from parade. One of these men had neither purging nor vomiting, only felt giddy and weak. He walked to hospital and was speaking to me when he fell down and became collapsed immediately.

Men were almost invariably taken ill at night or very early in the morning.

The persistence with which the disease hung about the regiment, its complete disappearance so often, only to return again with increased virulence, even though, to endeavour to avoid it, we vacated building after building in which it appeared, produced at last a degree of depression throughout the regiment which I thought it necessary to combat or dispel; and, therefore, I recommended again, and in writing, that the regiment should be moved from cantonments. Accordingly the following arrangements were ordered: head-quarters to march out and encamp at Chumkunnie, six or seven miles south of Peshawur. One company, No. 4 (which, as already remarked, had escaped cholera altogether), to remain in Peshawur encamped on the regimental parade-ground, in protection of the women and children, and of the heavy baggage. Arrangements were made by the Deputy Inspector-General for the sick of this company and for the sick of the women and children to be treated in the Artillery hospital.

On the evening of the 16th October, at 5 o'clock, the regiment marched out of the station (the Commanding Officer choosing that hour without consulting me) so as to avoid the heat of day.

It was injudicious to move in the evening, for the regiment arrived at the camp-ground before tents or baggage, and did not in consequence get under cover till nearly midnight. In October the difference of temperature between day and night is great, and our men, after an intensely hot day, and hot march, became quite chilled while waiting for their baggage, and many suffered in consequence from diarrhœa, fever and cholera.

On the morning of the 17th, at 3 o'clock, I commenced to move the sick and hospital baggage.

The sick numbered 117, the convalescents 32, and all, with their bedding and cots and the baggage of the hospital, were on the camp-ground, the tents pitched, the sick comfortably settled and breakfasted, and everything belonging to the hospital in its proper place by 9 o'clock a.m. of the same day.

I think it was a grave mistake to march the regiment out in the evening instead of in the morning, for men, debilitated by an intensely hot and unhealthy season, and depressed by the long continuance of an epidemic, were less able to endure exposure to the damp and chill of night air, succeeding a hot day, than to several hours of morning sun. The men in hospital suffered less, who moved early on the following morning, for the temperature rose as they moved, and continued to increase after arrival in camp, while the reverse was the case with the regiment. Besides, the regiment slept on the ground during the first night, as the cots, which I recommended to be sent for the men, did not arrive until next morning; whereas the sick were all in their cots within two hours after arrival in camp.

Chumkunnie is an extensive sandy plain without a tree or blade of grass, is traversed by the Bara river, and is by no means a good spot on which to encamp a sickly regiment; but it was impossible to obtain carriage to move so large a body of men with so many sick and weakly men, with their baggage and bedding, during the cool hours of morning or evening, to a greater distance, particularly as the other troops, also sickly, had to be moved from Peshawur too.

We remained at Chumkunnie five days; cholera broke out amongst us on the morning of the 17th, and day after day the number of cases of both cholera and remittent fever increased. From 17th to 21st 53 cases of remittent fever were admitted to hospital, 18 cases of cholera, and 10 died of cholera during the same period.

During the night of 20th, a cold chilly night, rendered doubly cold by the intense evaporation from the sandy soil 8 case of cholera from amongst the men were admitted to hospital, several natives also were seized with cholera, and five officers complained of feelings of discomfort and illness. During that night and morning the pestilence seemed to sweep over our camp, and more especially in one straight line from the bazaar over the row of staff tents to the hospital. A native in the bazaar (the butcher), the Instructor of Musketry, and the Commanding Officer, and two of his servants were seized with cholera. The Second in Command and the Adjutant both looked and felt ill, and also Dr. Hope, Assistant-Surgeon. The Second in Command and Dr. Hope both were ill with cholera within 24 hours afterwards. The Adjutant escaped cholera, but had the premonitory symptoms. My own and Dr. Baxter's tents were close, but at right angles to Dr. Hope's, and nearer to the cholera tents, which were detached from the rest.

Up to the morning of 21st October no officer had been ill with cholera, but on that morning Mr. Tabuteau (who went back to Peshawur and was treated there), and Major Middleton were struck down by the disease. Major Middleton had slight diarrhœa in the morning, but went to parade; half-an-hour after which he sent for me, when I found him in a state of collapse. He had no nausea, no vomiting from first to last, and only one enormously copious serous discharge. He never rallied from a state of collapse, had terrific cramps, became quite blue, and died, sensible to the last.

The Adjutant had free copious vomiting, no purging, never became collapsed, and I believe was only saved from cholera by the free vomiting, as was the case that day with the serjeant-major, several serjeants and privates; also with three officers next day, but all so affected had fever subsequently, and suffered from protracted convalescence.

We should have moved from Chumkunnie sooner but had no carriage; on the afternoon of the 21st a sufficient number of camels and elephants were placed at our disposal; and I thought it advisable to move, if only a short distance, if only to rouse the men and get away from the cold sandy soil on which we were encamped. Accordingly we moved that afternoon at 4 o'clock, hospital and all, to Oormoor, distant four miles. One Company, No. 7, was left at Chumkunnie as a guard for the guns of the Artillery, which corps also had been marched out of Peshawur to escape cholera.

At Oormoor cholera and fever continued to increase amongst us. Colonel Macdonald, Ensigns Drysdale and Lloyd, and Dr. Hope were struck down by cholera, and at the same time Captains Bell and Hyslop and Mr. Greig were taken suddenly ill, at first I thought with true cholera, but, after free vomiting of a liquid similar to the serous evacuations of cholera, fever set in, and subsequent convalescence was protracted in all. Captain Hyslop and Mr. Drysdale occupied the same tent; both were taken ill within a very short time of each other, the one with cholera and the other with fever, preceded by vomiting. Here admissions and deaths from cholera among the men were more numerous than ever, and within 24 hours the command of the regiment devolved upon four different officers. Here, too, it was that all, with scarcely an exception either amongst officers or men, laboured under the influence of choleraic poison, or at least sensations not only peculiar but in many instances distressing. These were as follows: giddiness, nausea, difficulty of breathing, tormina, and slight cramp in the feet, calves and legs, and fingers. These sensations were temporarily relieved, or at least lessened, by a stimulant combined with a small dose of opium.

The camp at Oormoor was badly situated, viz., on ground that had been only lately under cultivation, around the village and in the vicinity of several old graveyards, but no other spot affording a supply of water was near; we remained there however only one day, and during that day a change of weather occurred, heavy clouds rolled up from the south-west, a few heavy drops of rain fell, and in the evening a furious dust-storm came up from the westward, swept along the base of the mountains, and, turning in a north-east and northerly direction, swept over the valley and through our camp.

On the morning of the 23rd we moved to Jaloozai, distant in a south-easterly direction about 8 miles, and encamped on a clear open spot at a very considerable elevation above our former camps, and on a low chain of hills at the foot of the Cherat range. During the march Dr. Hope and Ensign Drysdale died.

On arriving at this camp-ground a feeling of relief was experienced by all; the air felt pure and bracing; the choleraic sensations already described became lessened, and for the first 24 hours no fresh cases of cholera occurred. The move, however, had not benefited those ill with cholera.

Immediately on arrival at Jaloozai I recommended the Commanding Officer (Major Burroughs) to send up 100 men on elephants to Cherat, to bring down as many men from thence as were fit for duty, and to send up as many weakly and recovered men from head-quarters, in addition to the 100 already sent, as the place would accommodate; accordingly, between the 24th and

28th three companies were despatched thither, and the men at Cherat, fit for duty, were brought down. Of the men thus sent away two were seized with cholera almost immediately after arrival at Cherat; but these were the only cases. Numbers of the men sent to Cherat suffered from intermittent fever afterwards. Twenty-four hours after arrival at Jaloozai 3 fresh cases of cholera occurred, and between that date and the 31st October 10 cases of cholera were admitted to hospital, and 11 terminated fatally, all in the stage of collapse. Remittent fever, however, began to decline and cases of intermittent fever to appear. On the 28th the regiment moved ground to a wooded plateau three miles distant, but rather higher than our last camp. Here our feelings of relief from choleraic sensations increased and our spirits rose, whether from the excitement of the move or the protection of trees, I know not, but certain both did good in so far as they afforded us pleasure.

From the morning of that day till the afternoon of the 31st we had no fresh cases of cholera, and those under treatment were improving; but on that day another case occurred.

On the 30th we had received orders to march out of the Peshawur valley by the Khunnekheyl pass, to cross the Indus at the Nelaub ferry, and encamp at Campbellpore, and there to halt until, cholera having disappeared from amongst us, the whole regiment should be re-united preparatory to commencing our march for Sealkote, the final destination of the corps.

On the morning of November 1st we moved three miles along the low chain of hills, on which Jaloozai is situated, and encamped near a village called Jubba. Here three fresh cases of cholera and three deaths occurred.

On the 2nd we moved a distance of four miles and encamped near a village called Jubba Mumoorie. Here one case of cholera occurred and one died.

On the 3rd, we moved a distance of five miles to Khunnekheyl, and encamped in a deep, narrow valley, or, rather, dry bed of a mountain torrent, through which a strong breeze blew during the day that we remained there. One fresh case of cholera occurred, but no deaths.

This was our last day within the limits of the Peshawur valley, and this was our last case of cholera.

On the 4th we marched through the Khunnekheyle Pass, and encamped at Ameer, again in a deep rocky valley, or dry bed of a mountain-torrent. At Ameer we halted one day as the baggage-animals were footsore and tired.

On the 6th we moved to Swanghae, and, on the 7th, to the west bank of the Indus. On the 8th the regiment crossed the river by wings, one in the morning, the other in the afternoon. Each company went across complete, with tents, baggage, cooks, camels, &c., so that the moment it reached the other side it went into camp.

On the morning of the 9th the sick and the whole hospital establishment crossed.

Throughout the passage of the river there was not the least hurry or confusion, and not one single man was unnecessarily exposed.

At every camp, after passing out of the Peshawur valley, we had cases admitted to hospital of a very doubtful character at first, the symptoms being vomiting, partial collapse, followed by fever, but no purging. These were cases of congestive remittent fever.

On the 10th we marched to Campbellpore and encamped there.

On the 11th the married men and families joined head quarters (from Pubbi, 14 miles from Peshawur, where they had been encamped some time). They were in a miserable weakly state; and, on the day of arrival, 53 women and children were admitted to hospital.

At this time, the head quarters of the regiment mustered 14 officers and 480 men, the rest of the corps being distributed as follows:—One company, 70 strong, at Peshawur; 1 company, 67 strong, at Chumkunnee; and 3 companies, 226 strong, at Cherat.

During our march from Jaloozai we moved short distances, and never at an earlier hour than 6 o'clock A.M., so as neither to fatigue the men or turn them out of their warm bedding to expose them to the damp and chill of very early morning.

Fires were lighted round the camps at night invariably; and, after the 1st November (having obtained a supply) quinine parades were held for all hands every evening, and wine was given liberally to weakly and convalescent men.

After arrival at Campbellpore, no parades except such as were absolutely necessary, were held; the men were not roused up before 7 o'clock A.M., and they were encouraged as much as possible to amuse themselves. Instead of keeping the regiment standing on parade, the Commanding Officer marched it short distances around the Station, so as to warm and rouse the men.

Immediately after crossing the Indus the feelings of nausea, cramps, and griping pains left us; there was no return of cholera, no diarrhœa, very few cases of remittent fever, and intermittent fever of the quotidian type became the prevailing disease. The men shook off all feelings of depression, regained spirits, and health began to return to all, though certainly, to many, slowly.

Towards the end of November the different detachments from Peshawur, Chumkunnee, and Cherat joined each other at Nowshera, and crossing the Indus at Attock, marched to Huttee, there to await the arrival of head quarters, which moved from Campbellpore on the 4th December; and, on that day, the whole regiment was again united.

On inspecting the different portions of the regiment immediately after, I found that the men who had been detached were not so healthy-looking as those who had been with head quarters all the time. Several circumstances may have caused this. In the first place, none of the detached parties were so well provided with quinine and wine as head quarters. The Chumkunnee and Peshawur detachments had been stationary and in comparatively unhealthy localities to the last. The party from Cherat consisted of the weakly and most sickly men, and they suffered a good deal from cold during the last weeks of their stay there.

It is worthy of remark that No. 7 Company, which remained at Chumkunnee after the regiment marched to Oomoor on the 21st October, never had any cases of cholera, and only three of choleraic diarrhœa while it remained there after departure of head quarters.

On 7th December the regiment commenced its march towards Sealkote, at which station it arrived on the morning of the 30th December.

During the march the cold at night and in the morning was intense; and, as the men were still far from being robust, I recommended that the hour of marching should, if possible, not be earlier than 6 o'clock A.M., so as to allow the men as much sleep and rest as possible, and not expose them to the intense cold of early morning. The plan was followed, and with the best results; and, though we had many cases of ague during the march, still the sick-list gradually diminished, and convalescents returned to duty.

Our carriage during the march consisted of 53 doolies (10 of these extra, for the women), 7 ambulance carts, carrying 6 men each, and 7 Transport Train waggons, carrying 12 men each.

Having given a short medical history of the regiment, its composition on arrival, and its services in this country; described the district of Peshawur, the barracks and hospital occupied by the regiment there, and their sanitary condition; also traced the course of the epidemic of cholera which visited the regiment during the year from the neighbouring districts; mentioned all the circumstances which might have been in any way connected with its origin or prevalence amongst us; and, lastly, described our exit from Peshawur and the move across the Indus to Campbellpore, with results to health, I shall describe the disease, the treatment adopted by me, the degree of success attending such treatment, and the appearances discovered in the dead body.

During the late epidemic we observed that cholera might have been preceded by diarrhœa as a premonitory symptom, or it might not; but the presence of diarrhœa was so much more frequently the case, that it may be considered the rule, and the absence of it the exception.

2. That diarrhœa generally preceded vomiting, not unfrequently for days; but even vomiting was not always present as a symptom or feature of cholera.

3. That a state of collapse might have been the very first apparent symptom, without any antecedent vomiting or purging.

4. That cases in which collapse took place without premonitory diarrhœa and vomiting were generally of short duration, and always ended fatally, the sufferers becoming blue before death.

5. That collapse might have taken place and been followed by either vomiting or purging, or by both.

6. That cases in which there was no premonitory diarrhœa, but in which free vomiting was present, either did not become collapsed at all, or the stage of collapse was short, followed by a short reactionary stage and rapid convalescence.

7. That cases in which vomiting was the prominent premonitory symptom, and diarrhœa either absent or slight, progressed favourably, even though they passed through both stages of collapse and reactionary fever.

8. That cases, again, which had premonitory diarrhœa for several days, followed by vomiting, had all the different stages in a severe and prolonged form, and the majority died of congestion of the brain.

All the cases returned by me as cases of cholera were those in which the different stages of collapse and reactionary fever were prominently distinct, and in which there was suppression of urine.

There has been no confusion of diseases, no mistake made between choleraic diarrhœa and cholera, so that my proportions of recoveries, deaths, &c., may be relied on.

The diarrhœa, which preceded cholera, was either of short duration, or continued during several days. Often it did not at first appear to differ from common bilious diarrhœa; but I think that, generally, it was accompanied by less griping, and I never remarked that tenesmus was present. It was accompanied, however, by a feeling of faintness and uneasiness, also by coldness of the surface, and slight crampy pains in the hands, feet, and legs. These feelings increased if the purging was not arrested; and if the evacuations became more copious and serous, the case became cholera; this period of diarrhœa forming the first stage of the disease. It was followed by collapse, sometimes slowly, and often rapidly, and during this the second stage, or that of collapse, the following were the appearances and symptoms:—rice-water evacuations and vomiting (both these often mixed with little white particles like white of an egg), sinking of the countenance, with dark areola round the eyes, prostration, coldness of surface, feeble action of heart and pulse, peculiar feebleness or roughness of voice, cramps, dyspnœa, and unquenchable thirst. These symptoms might be followed by reaction and the case progress well; or they might become aggravated, the vomiting and purging continue, the pulse become imperceptible altogether, the skin cold as lead, and bathed in cold clammy sweat, the breath icy, the tongue cold, communicating to the finger a peculiar thrill when touched, the voice no louder than a whisper, the eyes sunk, eyeballs turned up and lids half closed over them. Even with such aggravated symptoms, I have seen reaction take place. If, however, these symptoms continued, if the patient became restless, tossed from side to side, sighed heavily and often, and the surface became blue, the case ended fatally, the sufferer retaining consciousness to the last.

The shorter this period or stage of collapse the more favourable was the prognosis.

I observed that this state of collapse lasted from 2 to 20 hours, or even longer, and either ended in death, or reaction set in accompanied or followed by fever, thus:—

The vomiting and purging ceased, cramps no longer distressed the patient, the surface warmed, the countenance lost its sunken and cadaveric appearance, the voice improved, the pulse gradually rose, the breath and tongue lost their icy character, urine was secreted, at first in small quantities, evacuations became voluntary and tinged with bile, and convalescence followed.

However, if after these symptoms set in, the head became hot, and the patient complained of headache or drowsiness, and lay perfectly still, unwilling to be moved, if the eyes became congested, if urine had not been secreted, or only in very small quantities, accompanied by great desire to pass it, if the pulse lost its full round feel, and became small and wiry, the case was then passing into the state of congestion, and, as this slowly took place, the head became intensely hot, the eyes deeply congested, half closed, and the pupils contracted, the countenance sunken again, the breathing long and laboured, the patient lay on his back partially comatose and passed, involuntarily, copious serous evacuations mixed with numerous little black clots of blood. Such a case ended in death invariably. The congested state of eye and heat of head were often present from the commencement of reaction, and I think should be looked upon with alarm or at least suspicion. Several cases in which this state of the eye was present from the commencement of reaction recovered, but all had urgent head symptoms. The presence of this state of eye should attract attention at once, and lead us to anticipate head symptoms.

Relapses of cholera we found rare, but there were three which, after passing through the stages of collapse and reaction, again became collapsed ; of these two died in the second collapse, and one recovered, having passed through the stages of collapse and reaction twice.

One instance occurred of the same man having two distinct attacks of cholera with an interval of 33 days. On the first occasion he was very ill, but recovered completely, and was walking about convalescent ; when, however, cholera broke out in the left wing of the hospital (the third outbreak) this man was one of three attacked by the disease. On the last occasion he had neither premonitory vomiting nor purging, but became suddenly collapsed, and died within 26 hours. He was quite blue before death.

I believe that in cholera urine is often secreted without our being aware of it.

During the late epidemic we became aware of this fact from one of the cholera patients expressing a desire to make water, but was unable to do so, though he felt confident that there was urine in his bladder. The catheter was passed, and a small quantity of urine drawn off. It was necessary to repeat the operation often in this case, as the patient never had the power of passing it naturally. The same thing happened in other cases ; but it seemed to be an unfavourable symptom, for those cases in which this occurred died eventually. One, however, in which it was a prominent symptom, recovered, but the urine in that case was secreted in large quantities. The secretion of urine by no means afforded a certain hope of recovery.

Hiccough was often a troublesome symptom in the stage of reaction, and even during convalescence, not dangerous, though distressing to the patient, chiefly by preventing sleep. This hiccough was not accompanied by irritability of stomach.

Those cases of cholera that recovered were perfect recoveries, and only two were afterwards attacked with other diseases. One had erysipelas of the face and head, and the other intermittent fever. The men who recovered from the disease are now all in perfect health, and at their duty, except that one who suffered from ague.

One man, who was under treatment in hospital (right wing) for hepatic dysentery, was seized with cholera and recovered from a severe and prolonged attack. He died two months afterwards, and, on examination of the body, an enormous abscess was found in the liver.

Another man, also under treatment for the same, was seized with cholera, on the same night and in the same ward. He also recovered from a very severe attack, and is now in better health than ever he was.

TREATMENT.

The following was the plan of treatment chiefly followed in the 93rd hospital :—

In all diarrhœa cases admitted, a mustard emetic was immediately administered, followed by a stimulant draught of hot brandy and water with tinct. op : and tinct. zingib. The patient was put to bed, sinapisms were applied over the abdomen, followed by turpentine fomentations. In the majority of cases no more was required. If, however, the patient did not improve, the external application of mustard and turpentine was continued, and a stimulant astringent draught consisting of æther, opium, tinct. zingib, and camphor mixture given every half hour. If the case terminated in collapse, the whole trunk and lower extremities were covered over with mustard mixed with powdered capsicum (the mustard scarcely having any effect alone), blankets were rolled round the patient, and bottles filled with hot water, or bags filled with heated sand piled round. Afterwards stimulant enemata, consisting of beef tea and turpentine and opium, were thrown into the bowels, with the long flexible tube. When the mustard was removed, stimulant embrocations, consisting of volatile liniment with turpentine, were rubbed over the surface. At the same time stimulant draughts, consisting of small quantities of brandy and water and tincture of capsicum, also of æther, tincture of opium and camphor mixture were given every half hour alternately. A table spoonful of thin arrowroot and wine or brandy was given every five or ten minutes, and soda water *ad libitum*, to quench or allay the intolerable thirst.

The douche we tried in this stage of collapse, but with doubtful results.

As soon as the surface began to warm and the pulse rise, the stimulant draughts were diminished in frequency, the frictions, the application of mustard, and the exhibition of enemata stopped, but the arrowroot and wine and the soda water were continued. When reaction was established, even at the very commencement of it, the head was shaved, and a wet cloth applied, and the following pill and mixture prescribed :—℞. Camphor gr. iij., calomel gr. ij., ext: hyosciam: gr. i., ft. pill. To be taken every hour or every second hour. Also—℞. Carbon: ammoniæ gr. iij., Potassæ Nit: gr. iij., Sp. Æther Nitros: gutt. xx., Mist. Camph. ℥i, ft. Haustus. To be taken every hour.

If the patient complained of headache, if the eyes were congested, or if the face became flushed, the douche was applied to the head, and leeches to the temples, and if, after these remedies, headache continued, a blister was applied to the scalp, and an ointment, composed of tartar emetic, sabine and blue ointments, was applied until free discharge was established.

Strength was kept up by small quantities of arrowroot and wine; and by chicken broth or beef tea enemata.

In cases that were severely cramped, chloroform was given by inhalation with (in some cases) remarkable benefit, constantly with temporary relief. In prolonged irritability of stomach, we did not find chloroform, given by the mouth, of general benefit, but there certainly were several cases in which it was decidely beneficial. In cases when distressing hiccough was present chloroform failed to arrest or alleviate this symptom; but solid opium, in one grain doses repeated every second hour, and even every hour, invariably relieved and arrested it. Before giving solid opium to arrest this painful symptom, I had tried every other internal and external remedy, and particularly cold applications to the epigastric region, without benefit; a blister also to the epigastrium and an ointment composed of simple lard and morphia applied to the blistered surface (also without benefit). Internally, ammonia, æther, tincture of ginger, capsicum, cardamoms, effervescing draughts, chloroform, &c., were tried, but none of these were followed by any beneficial result; solid opium alone relieved and arrested the hiccough.

In the early stage of convalescence any nourishment, except in liquid form, invariably caused irritability of stomach.

All cases that yielded to the influence of mercury recovered, without an exception; and in all the fatal cases, no matter how prolonged its use, mercury did not take effect on the system.

Bleeding was tried in three cases, the blood was thick and black, and dropped slowly from the opening in the vein. These cases proved fatal. Hot baths were also tried in the state of collapse, where other remedies had failed to bring on reaction, but without success. Quinine, as a stimulant, was given, but without benefit, as it was rejected by the stomach.

All the sufferers from cholera, with very few exceptions, were persons who had suffered previously during the season from fever, or were in a weakly state of health, or laboured under some debilitating cause. The exceptions were so very few that I could name them.

No class of persons, no age, neither sex were exempt. Officers, non-commissioned officers and privates, women and children, all seemed to suffer.

Dr. Bouchier, Dr. Archer, and myself, and, latterly, Dr. Baxter, five medical subordinates, the hospital serjeant, and six European orderlies, who breathed the atmosphere, for months, in which cholera patients were treated, and touched and handled such patients constantly, escaped the disease. The Chaplain (Mr. Drennan), who was constantly in the hospital, hanging over cholera patients, and who performed the last sacred offices to the dead, did not take the disease. The fatigue-men, or those in temporary attendance on the sick, and almost every man at head quarters was so employed more than once, were not attacked by the disease.

Two instances amongst many men so employed occurred, but these men came to hospital with the disease on them, for I saw and admitted them, almost immediately after they commenced their attendance. Not a single native servant out of 30 in constant communication with the patients took cholera.

The women attacked were either pregnant, or weakly from other causes, and none of those who came to nurse their sick friends, nor a single husband who tended his dying wife, were taken ill; and the European matron also escaped.

The children that took cholera were all in bad health, suffering from teething, prolonged diarrhœa, or fever.

The prevalence of the epidemic during so long a period gave myself and the other medical officers opportunities of watching closely the different stages, and remarking the various symptoms displayed from the commencement to the close, particularly as cases did not occur in overwhelming numbers at any time; and yet, during the period through which it prevailed, there were far more than sufficient to enable us to pursue our observations. I therefore beg to make the following remarks, even though some, if not most of them, have been already stated:—

1. Cholera is generally preceded by diarrhœa, but not invariably.

2. It may be preceded by vomiting, or it may be preceded by both, the diarrhœa generally being present before vomiting; but even both may be absent, and collapse be the very first indication of the cholera seizure.

3. Free vomiting at first, without purging, is almost invariably a favourable symptom, and even purging at the commencement is not an unfavourable one. The most rapidly fatal cases we had were those in which there was neither vomiting nor purging.

4. Great irritability of stomach, after reaction had set in, was an unfavourable symptom; but bilious vomiting at the commencement and during the stage of reaction was favourable.

5. The shorter the stage of collapse the shorter was the stage of reaction, and the greater the probability of recovery, and the more rapid the convalescence.

6. The dying assumed no particular position, some died on their side, some on their back.

7. Jactitation, restlessness, and sighing were certain signs of approaching death.

8. Those who died in the stage of collapse were generally sensible to the last.

9. Those who died in the stage of congestion were only partially comatose.

10. Pregnancy was no safeguard, and women in this condition invariably died.

11. The eyes retracted into their orbits, and eyelids half closed, were most unfavourable symptoms; but the eyes naturally prominent, and the eyelids closed over them, a favourable symptom.

12. Intense fear or dread of the disease may probably predispose to cholera; but I am disposed to believe that intense fear is a premonitory symptom of choleraic seizure. Numbers were alarmed beyond description who escaped cholera, while many who were seized with the disease suffered from intense fear previously.

13. The disease attacked persons of all ages.

14. All cases in which mercury took effect on the system recovered in this regimental experience.

Post mortem appearances were observed, generally as follows:—

a. There was extensive ecchymosis on the neck and back.

b. The scalp retained a considerable degree of heat for hours after death.

c. The muscular fibre was very dark coloured.

d. The brain was congested; arachnoid membrane semi-opaque; dark thick black blood was found in occipital cavities, averaging from ʒ iij to ʒ vj, and, after removing the brain, a quantity of bloody serum escaped from the spinal canal.

The section of the brain presented many bloody points. There was bloody serum in the lateral ventricles, and the choroid plexus was of a deep purple colour.

The lungs were collapsed; the heart usually natural. Heat in the cavity of thorax was most painfully disagreeable when the hand was introduced. The abdominal viscera were, for the most part, healthy, but the kidneys were slightly congested, and the mucous membrane of the intestines was slightly congested also.

In my description of the valley of Peshawur I stated that its position surrounded by lofty mountains, the great amout of water flowing through and stagnating in it, the absence of all permanent vegetation, and the constant rotation of annual crops, all tended to produce what is called malarial disease; and I further stated that three different types of fever were endemic, and frequently became epidemic, in the valley, viz., the remittent, intermittent, and congestive. There is also a form which some call ardent, but which I think should be styled continued or ephemeral fever. This last prevails in the early part of the hot season; the others present themselves later in the season. The usual rotation therefore is, first, the continued, ardent, or ephemeral fever, in April, May, and even June; next the remittent and congestive remittent, in July, August, and September; and, lastly, the intermittent, in October, November, and even December.

Such was the routine as far as fever was concerned during the year 1862, and, as far as I can ascertain, the same rotation prevails every year, though sometimes to a greater or less degree, according to the season, and also according to the class of men composing the garrison, whether new comers or men who have been in the valley more than one or two years.

During the period of the prevalence of remittent and congestive fever, viz., in July, August, and September, but especially July and August, cases of heat apoplexy are of frequent occurrence, and I have remarked that this is the time of year in which cholera prevails also.

In April, May, and June the temperature is at its highest range, there is little moisture on the surface of the ground, consequently little or no evaporation, and, therefore, the temperature between day and night is nearly equal. Fevers at this season are of the continued or ardent type, and are of short duration.

In July, August, and September, rain falls, and the ground becomes saturated; the heat by day, however, ranges just as high as during the previous months, and causes rapid and great evaporation from the surface, which evaporation remaining in the atmosphere, lowers the temperature the moment the heat of the sun is withdrawn, thus causing rapid and great alternations of temperature or sudden changes in the degree of heat. Systems, weakened by the constant and great heat of April, May, and June, feel these sudden changes, are more liable to suffer, and have less power not only to resist, but to throw off disease; consequently, the fevers which had been prevalent during the dry months when the temperature was equable, became of a more prolonged and grave character, and we have then the remittent and congestive fevers, heat apoplexy, and cholera.

Later in the season, again in October, November, and December, though there is as much, if not more moisture in the air, the sun's heat is less, and the difference in temperature between day and night is not only less in degree, the power of the sun being so much less than in the preceding months, but the system feels the difference less, and consequently the type of disease again changes, and intermittent fever becomes the prevailing malady.

TABLE showing the Total Number of Cases of Cholera which occurred during the year, including Officers, Men, Women, and Children, with result.

	Admitted.	Discharged.	Died.
Officers	5	1	4
Men	93	33	60
Women	17	4	13
Children	15	3	12
Total ..	130	41	89

TABLE showing the Number of Cases of Choleraic Diarrhœa, with result.

	Admitted.	Discharged.	Died.
Officers	..	..	..
Men	109	108	1
Women	14	14	..
Children .. .	14	11	3
Total ..	137	133	4

The Average Strength during the year was—

Officers	24
Men..	1,007
Women	82
Children	101

TABLE showing the Average Duration of Fatal Cases of Cholera; also Cases of Recovery, in hours, among the Men.

Number of Cases.		Duration of Cases in Hours.
Fatal Cases	60	41
Recovered Cases ..	33	140

MEDICO-TOPOGRAPHICAL REPORT OF THE STATION OF LAGOS, WEST COAST OF AFRICA.

By STAFF ASSISTANT-SURGEON ROWE.

The town of Lagos, which is the principal station in this Command, and that in which I have been serving during the last nine months, is situated on an island of the same name in latitude 6° 24′ long. 3° 22,′ at the confluence of three rivers, the Ogun, Oshun, and Ossa, which at this point unite to form the Kradu Water, and discharging themselves into the sea over Lagos bar, form a delta. Twelve rivers are said to empty themselves into the Kradu Lake; the other nine, which I have not mentioned, are mere brooks.

The delta formed at the mouth of this lake had been originally a mud bank. On this has been formed a sand bank, which constitutes the island of Lagos. Its greatest length from east to west is three miles, its greatest breadth from north to south, one mile; but these measurements must not be considered as giving the area of the island, from the great irregularity of its outline. The depth of this deposit of sand varies from six to sixteen feet, and underneath it is always found argalliceous earth, white or grey in colour. Clay is found on the western bank of the lagoon opposite to the town, of good consistence, and used for making serviceable bricks. They are friable, and do not stand exposure to moisture well; but, as a reason, the clay is not thoroughly puddled, and the bricks are not properly burned. Within a few miles of Lagos, also, on the main-land, a coarse, soft ferruginous sandstone has been found, too soft for use in building, but probably indicating the existence of harder stone of the same kind in its neighbourhood. At Ikorodu, a town a few miles from Lagos, the huts are built of a hard, red clay, excavated from the ground on which the town is built, and this clay, if properly worked, would make very good bricks.

In no part of the island is there much elevation above the level of the surrounding lagoon. Perhaps the highest part does not exceed 30 feet above this; and these elevated portions exist only in two places, and there in an area of only a few square yards. A large part of the island is absolutely below the water level, and two of these tracts, larger than the others, form swamps which reach within a short distance of the sea on either side, while branches of the lagoon indent the margin in all directions.

These swamps are more or less extensive according as the rainy season, which extends over three months of the year, has been severe or light. During the year 1862 this season extended over a longer period than usual. It commenced in May, and very heavy rain fell in September.

There were no instruments for measuring the amount at the station, but it was not unusual for *heavy* rain to fall without intermission for 24 hours.

The ordinary daily range of the thermometer in the shade was from 76° to 86° Fahr., but 74° to 90° is not at all uncommon.

Neither on the island of Lagos nor on the main land in its immediate vicinity is there any eminence worthy even of being called rising ground, but at Ikorodu and at Epè the ground decidedly rises as we leave the river bank, especially at Epè, where the town, situated on the side of the rise, and girt by a dark belt of wood on either side, is very picturesque as seen from the water.

In the neighbourhood of Lagos the rivers, which, at a short distance, are all small streams, navigable only by canoes, and that with some difficulty, spread out and form lagoons, wide lakes of fresh water influenced by the tide to great distances, owing to their uniform level. One of the most noticeable facts, in connection with them, is the remarkable way in which they skirt the coast. Divided from the sea by a strip of land, varying in width from a hundred yards to two or three miles, they extend to the west of Lagos, navigable as far as Porto Novo, and, with little interruption, to the mouth of the Volla, while, to the east they are navigable as far as Benin and to the mouth of the Niger. I have no doubt that the present sea-beach is the result of oceanic action, and that the strip of land which now separates the lagoon from the sea was at one time no other than the bar which forms along the whole of this part of the African Coast. In support of this opinion I have to offer some facts:—

1st. Outside (to seaward) of the present beach, there is now a sand-bar; at some points more distant from the shore than others, frequently changing in position, and in the depth of water to be found on it, but always existing.

2nd. The warehouses built by the merchants on the beach, at the eastern side of the Lagos harbour, were originally placed close to high water mark, as is the case with those at Palma; but they are now all at a distance of 300 or more yards.

3rd. At a distance of two to three miles eastward of Lagos existed an opening into a creek (Bosheri Creek) crossing the beach, and affording communication at this part between the lagoon and sea, sufficiently wide for large cargo boats to pass at high water, and used by them when the present passage at the mouth of the harbour was too rough to permit of their entering there. This outlet had been gradually becoming less available, and is now so completely closed that I think it unlikely to become again open.

The whole of this beach is very shelving, and above high water mark the sand is loose and deep, horses' feet sinking above the fetlock joint. Along this beach, for a distance of 33 miles between Palma and Lagos, the only sign of ocean life I met with was one Medusa and some small sand crabs. This I believe to be due to the force of the breakers and the entire absence of rocks, there being no shelter either from sun or sea.

The formation of land is well shown in these lagoons, and may be traced through all its stages, in ascending scale from the first step in the process to the existence of solid land; not unfrequently at the same point in clear water in the middle of the current we see the growths from the bottom which perform the first step in the process; next to them, water lilies and other floating plants on the surface; long grasses come next as we approach the bank, and when once these have gained a footing, the work of solidification proceeds rapidly. Acres of shallow water are grown over with this grass, and from its margin, by the force of the current and the rise of water level during the rainy season, are detached large masses forming floating islands. In two instances, during my stay here, ships have narrowly escaped the most serious injury from their having been dragged from their anchorage in the lagoon towards the mouth of the river. Large water snakes are often found amid these grasses, and these snakes make great efforts to climb up the cables of the ships which come in contact with the island. In places where there is but little current lagoons are rapidly filling up, and at many points a communication between two lakes is only kept open by the constant passage of canoes from one village to another.

The swamps before mentioned and the marshy tracts to be found in all parts of the island, give off an immense quantity of miasma, to the presence of which no doubt is to be attributed the prevalence of intermittent and remittent fevers. Even the sea-breeze, that sets in about ten in the morning, has in its passage to the island to pass over miles of lagoon and swamp, and must become loaded with the pestilential vapours arising from them. The porous, light sand which forms the soil of the island affords a pretty ready outlet for surface water, except in the rainy reason; and then, as there is hardly the slightest perceptible elevation to assist the flow of the water, stagnant pools form, which, on drying, leave a layer of black slime exhaling in the hot tropical sun a vapour the odour of which is as disagreeable as its qualities are noxious. The town in this respect is still worse than the country, and in passing through it, collections of decaying animal and vegetable matter are to be met with at every turn. Heretofore the Government has not been able to alter the daily filthy practices of the natives, and to induce them to use more convenient places, as the religious prejudices of many of them enjoin their use of particular spots for the offices of nature, and they are very tenacious of their customs in this respect. It is almost impossible to change even their practice of burying the dead in their houses, which in such a climate as this, must be productive of the worst results. In several parts of the town we find a depth of six to twelve or more feet of rich black soil, produced by the decomposition of human excreta and leaves which must have required centuries to accumulate.

The habitations of the natives consist of the same low mud huts, with thatched roofs, which appear to be the chosen dwelling-places of the negro wherever the white man has not exerted his influence. In the towns these huts have a mud floor, well worked and hard, and are kept very clean; but they are very dark, have very little arrangement for ventilation, and it is a common practice to make a wood fire to drive away mosquitoes at night. Every hut has an open verandah before and behind, and it is here that all the home labours of the day are carried on, the inner room being used principally as a sleeping one. These little huts are frequently built in groups, on four sides of and within a quadrangle, in which case the little enclosure of land is common to all the huts; but if the huts are detached, each has generally its own enclosure. Occasionally an attempt at drainage from this plot is to be seen, and the sewer pipe is a piece of palm tree hollowed out; but this drainage is never conducted further than to the neighbouring street, where all is allowed to lodge.

The uncultivated vegetation found in the island consists principally of mangrove, which grows luxuriantly in the swamps, very spare and dry grass, and scattered bushes, among which the wild plum, the wild tamarind, two other species of legummosæ with very large seeds (one of them the horse-eye of the West Indies), one of the varieties of the cotton tribe, two species of convolvulus (white and purple), and a very handsome yellow flower belonging to the rosaceæ, are the most prominent members. Another plant, bright scarlet in colour, occurs in large quantities, its envelope is edible, like that of the wild tamarind. Two or three large cotton trees (so scarce are they as to be used as land marks by seamen) with a few cocoa nut trees, are, excepting some dwarf palms, the only trees in the island which are not directly the result of cultivation; but in the neighbourhood of Lagos, on the main land, or even on the strip of beach between the lagoon and the sea, the vegetation presents all the luxuriance of the tropics. Thick groves of palm trees come down to to the water's edge on the sea-beach; and further inland they are interspersed with large exogenous trees. The timber from the forest trees is not generally good: the cotton tree, for instance, possesses no consistency of fibre to render it useful for house structure; but there are others which are hard, fine in the grain, and variegated in colour. Two varieties of brimstone wood, a light and dark yellow, are both handsome and take a fine polish. There is also a darker wood, resembling mahogany, which makes handsome and durable furniture.

Commercially, probably, the oil palm is the most valuable among the forest trees, affording as it does palm oil from the envelope of the seed, and nut oil from the kernel; but, in supplying the wants of the inhabitants of the country, it is equalled, if not surpassed, by the cocoa and the bamboo. The bamboo supplies the native in the village with all his building materials. The sides of his hut are of bamboo neatly tied together by a running creeper, the rafters for his roof are of bamboo, the thatch to cover it is of bamboo, split bamboo serves him for a torch at night, a bamboo pole pushes his canoe, a bamboo tube drains the brine from the salt filter, bedsteads, chairs, sofas (for European use) are all made of this useful wood. In its liberal supply of our wants the cocoa-nut palm quite equals it. The juice of the unripe fruit is a most refreshing and wholesome drink. The ripe kernel is pleasant food, the hard shell forms drinking cups, the pericarp provides brushes, and the tree-fibre ropes, whilst the stems are most serviceable in building. The beautiful fan palm is not common near Lagos; but, strikingly handsome in contrast of colour to the dark background of the trees round them, are a gigantic white lily and scarlet arum (both common in the woods) and again, contrasting with these, bright yellow lichens and the purple and white convolvulaceæ already mentioned creeping over the whole.

There are two kinds of plum-trees which produce fruit in large quantities—the one red and the other yellow. The fruit is quite harmless, possesses much astringency, and is pleasant, although the fleshy pericarp is very woolly. This quality would probably be remedied by cultivation. I have found the wild vine in the woods near Palma bearing a profusion of small fruit.

Of cultivated fruits and vegetables the farms on the island of Lagos and on the main land near to it provide a good supply with plenty of variety.

The plantain and the banana are both most valuable and pleasant articles of food here. The papai, or pawpaw, peculiar in the fruit making its appearance on the stem before either leaves or flowers are met with, also oranges and limes, custard apples, mangoes, guavas, cashew nuts, pine apples, melons, and small cucumbers or ghirkins, tomatoes, onions, garlic, water-cresses, two kinds of green vegetables (whose species I cannot at present determine, but which are very wholesome when cooked as spinach), bread fruits, the edible yam, the cassada, the farina of which is the staple food of the population, pumpkins, maize, and small Chili peppers, are all plentiful.

Few, if any, wild animals of size or importance are found on the island, but on the mainland and beach the tracks of the small African leopard are often seen, and herds of small deer are common. The leopard has been shot in Lagos. There is an animal common here, as on other parts of this coast, called by the emigrants from Sierra Leone the "bush-pig." When fresh it proves very good food. It is a cleanly animal, and lives on roots, and may be seen about the farms in the evening, searching for food. It is from 12 to 18 inches long from the nose to the root of the tail, about 8 inches high, and has a tail longer than the body.

The scavenger vulture is here in large numbers; the kite-hawk is common; cranes, white and grey, sandpipers, and quail are numerous; land-crabs in great numbers are found in the rich soil at the edges of the swamps; snakes are common. I have noticed three distinct species, and each furnished with poison-fangs. Monkeys of three or more different varieties exist. Doves, wood-pigeons, wild-cats, porcupines, iguanas, and parrots are common in the woods. Water-fowl are plentiful on the lagoons, principally of the crane species; curlew also on the banks; there are wild ducks of three species. The black and white or fish eagle is often seen, and the black ibis. The weaver-bird is found in the woods and on the outskirts of villages, and numbers of yellow palm-birds. I have noticed, further, a handsome bird, of plumage orange and brown, with a peculiarly silent flight, the size of a jay; as well as owls of two varieties, the migratory swallow, and the common heron and gull.

Sharks and alligators are frequent in the lagoon, which also supplies fine fish of several kinds, as well as oysters and prawns. The natives make ingenious traps to catch these fish; they also angle with a line, and use a cast-net. On the banks of the lagoon are quantities of small crabs. The mole-cricket, eaten by the natives, is common all over the island. Frogs innumerable crowd the swamps, and lizards of all kinds are common. Bats, measuring 6 to 18 inches across the wing; beetles, horned and not horned, of gigantic size, mosquitos, sand-flies, mangrove-flies, ants of three or four kinds, and some an inch long, and cockroaches all abound.

The principal diseases of the population are fevers, remittent and intermittent, from which the black inhabitants are not more exempt than the white, though with the black man there is not the same tendency to cerebral complication which renders these diseases so fatal to Europeans.

Fever, in the black subject, partakes more of the intermittent than the remittent type, and there is, generally, a well-marked cold stage. The native remedies for fevers are principally the warm tea of two or three aromatic plants, and an infusion of some green herb, of which the dose is four or five pints, and which purges violently.

Dracunculus is common here, elephantiasis also. The native treatment for dracunculus is by a simple ointment, in which palm-oil and lime-juice are the principal ingredients. I have not seen any native treatment used for elephantiasis. Ulcers on the legs are very common, so much so as for sound legs to be the exception, and Europeans, creoles, and natives suffer equally. I consider the presence of this affection due to deteriorated condition of the blood and to congestion of the hæmorrhoidal and abdominal veins consequent on enlarged spleen. Enlargement of the spleen, allied to, although not identical with, the ague-cake of the fenny districts of England, is endemic. There is no white resident who has lived here for any length of time who has not an enlarged spleen; and the margin of the organ, in many instances, may be traced far over on the right side of the abdomen, and descending as far as the lower border of the umbilical region.

Water is found at a few feet below the surface, in all parts of the island, and difficulty is found in sinking a well below a certain depth unless the men are provided with some apparatus for preventing the sides of the bore from falling in on them. The sides of the well in use by the troops are formed of casks, as is the custom here, and it appears to answer very well, temporarily; but in establishing permanent barracks, a good brick well will have to be built and sunk in the dry season, and fitted with a pump, so as to keep the mouth of the well closed. This arrangement would probably improve the quality of the water still more than has already been done by the use of dripstones.

The vegetable productions adapted for supplies to the troops, are maize, the Indian corn of the country, rice of good quality, yams and cassada. The corn is used entirely by the natives. It is found cheaper to import flour than to buy and grind the corn. The natives, for use, soften it in water, beat it in a wooden mortar, and after boiling the pulp, which has been carefully separated from the husks, eat it either dry as a paste, or boiled up into gruel. It forms the morning-meal of the black population. It is a very wholesome dish, but tastes a little acid, from the fermentation which has taken place in the corn while soaking to soften. The meal of cassada, or cassava-root, is the staple food of the natives. It is carefully prepared by washing, drying, and roasting, and, is mixed, before eating, with hot water, when it swells into a mass. It is generally eaten warm, and with such vegetables, palm-oil, fish, or meat as their means permit. Meat is a luxury but seldom indulged in excepting by the wealthier. Smoked fish are used largely; they are simply exposed, in an earthern pot with a few holes in it, to the smoke of a wood-fire.

Salt is an important article of the natives' produce, although they cannot produce it at a price to compete with importers. The evaporation of sea-water is the means adopted, and in the construction of the various parts of their apparatus they have shown a considerable amount of skill and reflection. They are thoroughly acquainted with the manufacture of fire-clay, and use it to a large extent in the construction of their ovens, in which the final evaporating process is conducted.

Beef and mutton are very inferior and lean; the animals small. Fowls are poor. The pig seems to thrive better than any other domestic animal. Goats are plentiful, but are held sacred and used for sacrifice; there is great difficulty in purchasing them, as the natives refuse to part with them excepting under extreme necessity. Guinea-fowl, ducks, and turkeys are brought from Porto Novo, but none of these animals thrive at Lagos, and fowls of all kinds die in great numbers. Horses are brought down from the interior, but they are miserably small and misshapen, rarely exceeding 12 hands in height; 13 hands 2 inches is considered a very large horse. They are all entire, and are very strong and hardy, but are too small to carry weight for a long distance. They require very great care; loin disease, inflammation of the neck of the bladder, and farcy are very common diseases, and prove rapidly and almost invariably fatal. The price of these little animals is exorbitant compared with what would be their value at home, 22*l.* being the average price for one of the smaller ponies.

The natives are very ingenious in the manufacture of grass mats and mats made from the bamboo, also in wicker and leather-work, dyeing the leather very tastefully. They do not appear to use any astringent in tanning the hide, but expose it to the sun for some time sprinkled with wood-ashes, and rub it all over with cassava-root.

REPORT

OF THE

MEDICAL BRANCH FOR 1862.

BY

H. MAPLETON, M.D.,

DEPUTY INSPECTOR-GENERAL OF HOSPITALS.

TO THE DIRECTOR-GENERAL

OF THE

ARMY MEDICAL DEPARTMENT.

SIR,

I HAVE the honour to submit the Report of the Medical Branch for the year 1862.

Officers of the Department.

On the 1st of January, there were 983 Medical Officers of all ranks on full-pay. During the year 49 Officers were brought in from half-pay, and 51 Assistant-Surgeons entered the Service; 17 Medical Officers died; 17 resigned; 10 retired upon permanent half-pay (7 from ill-health and 3 from other causes); 13 were placed upon temporary half-pay on account of sickness; and the services of 4 were dispensed with.

Medical and Surgical Transactions.

Professer Maclean's remarks on some of the forms of disease observed in invalids from tropical climates, call attention to points of great interest to the Soldier as well as to the State. His observations on the principles which should influence the treatment of such cases are prefaced by a sketch of the unfavourable sanitary conditions under which the soldier is placed during his service, and are illustrated by extracts and a series of cases selected from his Annual Report for the previous year.

To Deputy Inspector-General Longmore we are indebted for a summary which completes the history of Gunshot and Sabre Wounds attributable to the Indian mutiny; and also for some interesting remarks on a case of gunshot wound of the liver, and on a case of penetrating wound of the abdomen, published in a previous volume.

A Paper by Surgeon-Major Tufnell, on the Treatment of Internal Aneurisms; some remarks on the Direct Volumetric

Determination of Uric Acid in the Urine, by Dr. de Chaumont; and a series of cases by various Medical Officers follow.

Staff-Surgeon Crawford has furnished some observations on the Examination and on the Physical Disabilities of Recruits, and on the Re-engagement of Soldiers, which will be found at p. 524.

The Report of the fifth session of the Army Medical School, and the results of the examination of the candidates before entering, and at the termination of the session, are recorded at page 556.

The Warrants, Circulars, and General Orders having reference to the Officers of the Department are given at page 560. It has been deemed advisable to bring them down to the end of the past year, in order that Medical Officers may have them in their possession in this permanent and accessible form as soon as possible.

A List of Medical Officers on Full Pay, corrected to 31st of March, 1864, is given at page 578.

In submitting this Report, as the Head of the Medical Branch, it is but right to state that, in consequence of ill-health, I felt compelled to delegate, with your permission, the preparation of it to Staff-Surgeon Dr. Crawford, and that to him is due whatever credit may attach to the manner in which this duty has been performed.

I have the honour to be,

Sir,

Your most obedient humble servnt,

HENRY MAPLETON, M.D.,
Deputy Inspector-General.

Army Medical Department,
5, *Whitehall Yard,*
May 7th, 1864.

MEDICAL REPORTS FOR 1862.

BRIEF REMARKS ON SOME OF THE FORMS OF DISEASE OBSERVED IN INVALIDS FROM TROPICAL CLIMATES.*

By W. C. Maclean, M.D., Deputy Inspector-General, Professor of Military Medicine, Army Medical School, Netley.

I propose, in the following pages, to give a brief summary of the leading principles of treatment in some of the chronic forms of tropical diseases described by me more fully in the two Annual Reports on the Medical Division of the General Hospital, Fort Pitt, which I have had the honour to submit to the Director-General. In so doing I shall follow the order laid down in the system of classification now in use in the Service.

It is the rarest possible occurrence to meet with an uncomplicated case of disease in a Military Invaliding Hospital. This, indeed, is what we might naturally look for, if we reflect for a moment on the conditions and accidents of military life everywhere, but more especially in hot climates. From the hour the soldier enters the army until he quits it, he is brought under influences to which men in civil life are not exposed, except in a minor degree, for short periods, and at irregular times. It is not pretended that all these are hostile to health, moral or physical; on the contrary, not only are many of the restraints of military life absolutely essential for the maintenance of order, but they are good in themselves, as tending to accomplish the purposes of a salutary discipline on all who come under their control. But while this is undoubtedly true, it is not to be denied, on the other hand, that the soldier is exposed to a greater number and variety of difficulties, trials, and hardships than fall to the lot of any considerable body of men with whom the physician is brought into contact, and on whom he has to exercise his art. It is difficult for those who only see him in the "pomp and circumstance" of the parade or field day, in martial attire, and regard him as one who is "well fed and housed," not to contrast his lot with that of the artizan doomed to pursue an unhealthy occupation in some dismal and unsanitary workshop, and to draw conclusions favourable to the lot of the soldier. A closer acquaintance with the facts of the case would tend in a great measure to dissipate such a notion, and lead the observer to the more true conclusion, that as every calling has its peculiar pains and inconveniences, that of a soldier is no exception to the rule. To some of these I must now briefly refer, as they tend to throw some light on the causes of those diseases on the treatment of which, in their chronic and complicated forms, I am about to make a few observations.

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* This paper was written and ready for the press before the Report of the Royal Commission on the Sanitary State of the Indian Army was published. On reading that report, my first determination was to withhold these remarks, containing as they do observations and recommendations to some extent anticipated in the exhaustive Report of the Commissioners. It has, however, been deemed advisable to print this paper, as it was written, as the testimony of an independent witness to the urgent necessity for the various sanitary reforms advised by Her Majesty's Royal Commissioners.—W. C. M.

1st. Whatever the age of the recruit may be at the time of his enlistment, it is indisputable that he is, as a rule, treated by those whose business it is to make a soldier of him, as if they were dealing with the frame of a mature man. It is only within the walls of an establishment in which the invaliding business of the army is conducted, that the full extent of the evil accruing from this system can be seen and appreciated. It is expressed, not alone by the number of feeble lads who break down at drill, and, after a more or less protracted time in hospital, are discharged the service; for we see the fruits of it in the persons of those who, under the first strain of service, encumber the hospitals, and are discharged after three or four years of, to the state, almost nominal service, for the most part so crippled in the organs of circulation as to be unfit to earn their bread in any occupation requiring active exertion. In the last two years no less than 623 men were discharged the service at Fort Pitt, labouring under valvular disease of the heart, and hypertrophy of that organ; and in the Medical Division at Netley, although home sources of supply are cut off, the number of cases of disease of the circulatory system admitted from foreign stations excites the astonishment of all professional men who visit the hospital. My colleague, Professor Aitken, has forcibly brought this important subject to notice in his lectures on the "Growth of the Recruit and Young Soldier;" but I am so deeply impressed with its importance, and in the course of my daily duty have it so continually forced on my attention, that I cannot resist bringing it to notice once more. In dealing with diseases so little amenable to treatment, to *cure*, as organic affections of the heart, it is particularly incumbent on us to study their causes, with a view to prevention.

2nd. Closely allied to the above as remediable, and easily remediable causes of disease in the soldier, are faulty dress and accoutrements. I have nothing new to say on the subject; I dwelt on it at length in my first report,* and my colleagues, in more than one report, have expressed their opinions on it, and the longer I labour in a General Invaliding Hospital, the more I am impressed with the fact that the regulation knapsack of the British army is a fertile source of diseases of the respiratory and circulatory systems, and the more I know that intelligent sufferers from this ill-contrived encumbrance are as well aware of the source of their sufferings as those who can explain it on physiological principles.

3rd. Deficient cubical space and imperfect ventilation. Quite aware of all that has been done to mitigate the admitted evils resulting from these defects, and cognizant of the good that has everywhere followed all such efforts, I yet maintain that overcrowding in barracks, and sometimes in hospitals, is the master sin of our military system. It follows the British soldier wherever he goes, it prevails from Chatham to Calcutta, and from thence to the farthest frontier station in Upper India, sapping his health, and aggravating whatever disease may be endemic or epidemic in the locality.

4th. Intemperance is the besetting sin of the soldier in all climates; if by any means he could be weaned from this fatal habit, a blow would be struck at the root of his offences, alike against discipline and his own health, the effect of which would soon be apparent in the diminished population of our military prisons and hospitals. With intemperance lust goes hand in hand; constrained to a life of celibacy, the soldier gratifies his passions with little regard to his health, and the result is, 5th, the poison of syphilis, which is the fruitful parent of some, and a serious complication in nearly all his diseases.

To the above we must add the unavoidable exposures and hardships of military life, and in tropical climates the effects of malaria, high temperature, the extremes of dryness and moisture, begetting fevers, dysentery, liver complaints, and epidemic cholera, diseases which are the scourges of our army and the main source of the mortality-rate which prevails, and which cannot in India be placed at a lower rate than 41 in a 1000, and is often as high as 60 in 1000.

Having thus glanced at some of the more prominent causes of disease, I now proceed to make a few remarks on the treatment of the chronic forms of some tropical diseases as observed in soldiers invalided from India.

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* [Extracts from Dr. Maclean's report, here referred to, will be found at page 44, of this volume.—T. C.]

CLASS 1.—ZYMOTIC DISEASES.—*Order* I. *Miasmatic Diseases.*

Febris Intermittens ; Febris Remittens.—Within the last two years only 13 cases of intermittent fever were admitted from India. These figures do not give the faintest approximation to the number of men suffering from malarial cachexia. Whatever be the disease under which the patient is admitted, he is almost certain to have suffered from one or other of the malarial fevers, and even if he has escaped an attack of fever, the signs of malarial poisoning are generally evident enough, and nothing is more common than to see patients labouring under other diseases going through the stages of ague, with more or less regularity, or giving evidence of malarious cachexy in the shape of what they themselves call "dumb ague," evidenced by slight attacks of pyrexia, seldom preceded by chills, or followed by a sweating stage, and attended by trifling headache, with a dry and harsh skin. It constantly happens that men are discovered in this state at the hour of visit, the patients themselves hardly thinking it necessary to call the attention of the Medical Officer to a condition to which habit has reconciled them. This malarious condition of the system is evidenced, not only by the symptoms above described, but by enlargement of the liver and spleen. The latter is the most constant. At the post mortem examinations we find malarial spleens in every state of development from the soft mud-coloured spleens of the earlier and more acute forms, to solid hypertrophy of the organ, a condition of this ductless vascular gland invariably associated with that peculiar state of the blood in which white corpuscles are not only in excess, but may be said almost to take the place of the red corpuscles. A condition indicated by a dirty lemon-coloured complexion, much bodily and mental prostration, listlessness and want of energy, and I need hardly add, utter incapacity for military duty. The size to which the spleen attains in cases of this description is sometimes enormous, witness the case of Newman, reported in my Annual Report for 1861. In this case, although the patient was only a drum-boy, 17 years of age, of small stature and slight form, the spleen attained the enormous proportions of 14·7 inches in its long diameter, and weighed 10 lbs. 15 ozs. With the above we have almost constantly pigmentary degeneration of the liver, spleen, lungs, and sometimes even of the cerebral substance.

We might naturally expect that cases of malarial cachexy would derive much benefit from the voyage home, and, in the case of officers, this is generally true in a very marked degree, not so much so, however, in the case of soldiers. The latter are seldom invalided until organic changes have taken place ; and too often the result of the voyage is to add, under the influence of salt rations and absence of fresh vegetables, a scorbutic complication to the case. It will excite no surprise in the minds of those familiar with chronic forms of tropical disease to hear that, in few of such cases as I have just described, do the sufferers again become effective. Time is an important element in the treatment of such cases ; and were the Medical Officers, in their anxiety to restore men to the service, to detain them sufficiently long in hospital to effect this purpose, even the magnificent proportions and ample accommodation of the Royal Victoria Hospital at Netley would not suffice. The experience of Indian medical officers has demonstrated, even in the case of officers who are seldom so charged with malaria as non-commissioned officers and privates, little good is effected from a residence in Europe that does not extend over at least two years. If there is any truth in this observation, and I believe it to be strictly true, it is obviously impossible to detain under treatment the large numbers of malaria-tainted men arriving from India until they again become effective. In those cases where the spleen has degenerated into a condition resembling that of the boy Newman, above described, and in which the condition known as *Leukœmia splenica* has been developed, no treatment of which I know anything can avail. An organ in such a state may be practically considered as out of the round of the circulation, and therefore beyond the reach of any remedy introduced into it. Where the splenic enlargement has not reached such a stage of consolidation, we may hope, under the influence of a climate unpolluted by malaria, aided by judicious treatment, to restore the patient to a tolerable state of health. No remedy, according to my experience, is more useful than active exercise in a pure and bracing air. To those who are in a condition to follow it, perhaps the best prescription a physician can give to a patient so affected, is a season of grouse-shooting on the mountains of Scotland, or a walking tour in the same picturesque regions. Sydenham sent his patient to Inverness, in days when that journey was a serious undertaking, to consult an imaginary physician of great skill in the capital of the Northern Highlands. Although "the celebrated Dr. Robertson" was not seen, the patient returned to London free from his ailment. The same skilful physician is still to be found in those northern regions, and malaria-affected patients cannot do better than go in search of him. A course of blood-depurants, judiciously chosen, will greatly aid the action of pure air and exercise. The best of these is chlorate of potash in combination with iron. All the preparations of iron are good, but perhaps the most agreeable, and the one least apt to disturb the digestive organs, is the tincture of the acetate—a preparation in the Dublin Pharmacopœia,—for which the citrate of iron and quinine can be occasionally substituted. If the bowels are sluggish, recourse may be had to the extract of taraxacum prepared *in vacuo*, with the addition of a little diluted nitric acid. If the patient complains of dull uneasiness in the region of the liver, the last-mentioned combination will be found particularly useful, and its action may be assisted by an occasional pill composed of a few grains of the soap-pill with aloes, to which a quarter of a grain of podophyline, with a minute quantity—say the sixth of a grain—of freshly-made extract of nux vomica, may be added. This uneasy condition of the liver and sluggish action of the bowels are often much relieved by the use of the wet compress, with, of course, a bit of waterproof sheeting over it. This acts as a local fomentation, and the steady, uniform pressure it maintains appears to act beneficially both on spleen and liver. And here I may say, that, while the use of the "water-cure" as a remedy for all diseases, cannot be enough condemned by scientific physicians, I think its judicious application in malarious cachexy highly conducive to health. The whole discipline of a well-regulated establishment of the kind is well adapted for such a state of the constitution. For the most part the position of such houses is well chosen; pure air, pure water, plain and wholesome food, abundance of exercise, cheerful society—hygienic measures of first importance, all tending to promote the end in view—are systematically pursued, while the function of the skin, that great eliminating organ, is roused to a state of activity. There is no reason why nearly all that is really good in such discipline should not be carried out in suitable cases in such a hospital as Netley. The nitro-muriatic bath, so much prescribed by Sir Ronald Martin, is often used by us at Netley, and sometimes with marked benefit.

I cannot pass from this subject without asking the attention of regimental medical officers serving in tropical climates, to a practice constantly insisted on in my course of lectures on tropical diseases, addressed to the young medical officers pursuing their studies in the Army Medical School. It is this. When a young soldier, or indeed any soldier, is discharged from hospital after treatment for intermittent fever, not to lose sight of him, not to wait until he presents himself again suffering from another attack, but to place his name and the time of next expected attack on a list kept for that purpose, and to have him brought to hospital two or three days before the date of the expected paroxysm, not to be detained, not to be kept from his duty, but to have his system fortified by a prophylatic dose of quinine, which should be continued once or twice a day until the time for a paroxysm has passed.* If this simple plan is consistently and diligently carried out I promise those who pursue it results gratifying to themselves and useful to the public service. Every paroxysm that is in this way aborted, is an enormous gain to the affected soldier, and to the state whose

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* [Extract from a report by J. H. West, M.D., Assistant-Surgeon, 21st Fusiliers, in charge of detachment stationed in Demerara, during the year 1862, from which it appears that he has pursued a similar course of treatment to that recommended above since the 26th of July, 1862, with very satisfactory results.

"During both years (1861 and 1862) as might be expected in this malarious Colony, diseases of the zymotic class formed the chief admissions into hospital, but I am glad to say that they were somewhat less this year than last, in consequence, no doubt, of the return of the detachment from Belfield Camp to Eve Leary Barracks, George Town; and also in consequence of the prophylactic treatment I pursued costly servant he is. The success that has crowned the liberal efforts of the Government of India to introduce the quinine-producing plant into the hill ranges of that country is full of promise for the European soldier serving there, for in no disease is it more true that prevention is better than cure, than in paroxysmal fevers. Every unchecked paroxysm is a step towards organic changes and blood degradation. There is yet another point. While quinine is the sheet-anchor of treatment in these fevers, I would earnestly counsel military physicians to be more diligent in the use of blood depurants. I have often been baffled in curing agues of long standing with quinine, until I premised a course of such remedies as chlorate or acetate of potash, and in the latter years of my Indian practice I never failed to use such remedies freely, and always to the great benefit of my patients.

Dysenteria.—The form in which we see this disease in an invaliding hospital is the chronic, sometimes taking on a sub-acute action. Rarely indeed do we see this disease in an uncomplicated form. Sometimes the complication is hepatic, often malarial, not unfrequently scorbutic, and occasionally cases present themselves in which all three complications combine to distress the patient and embarrass the physician. The extent to which dysentery has scourged Europeans in India is the clearest proof of the unsanitary state of the towns, stations, garrisons, barracks, and houses in which they live. Calcutta, the capital of India, presents in terrible abundance all the *factors* required for the generation and propagation of this disease, and there we find it doing its work without respect of persons, on all classes and ages of the community, and now and then almost paralyzing the Government by destroying in a few days one of its most important members. The same is true of many of our stations, taking them as a whole, and particular sites and localities in others have long been notorious for this disease, while other parts of the same stations, under more favourable conditions, enjoy comparative immunity. The causes of this disease, like those of the class to which it belongs, should be attacked by the same means which have almost banished it from our English homes. It is to be hoped that the time is coming when it will be understood among all classes in India how much they can do to root out the plagues that prematurely destroy so many valuable lives. This knowledge must proceed from above downwards, from the governors to the governed. Hitherto the former, like the latter, have accepted the devastations of zymotic diseases as if they were the immutable decrees of heaven from which there is no escape. Wherever the conditions favourable to the propagation of this disease are present, overcrowding in barracks co-operates with terrible effect. The evidence on this point is conclusive, I have adverted to it already, but it can never be sufficiently insisted on.

I dwell on this point because I think that in treating of zymotic diseases everywhere, measures of prevention should take precedence of means of cure. The first effects the race, the second the individual. If I were asked by any one, sceptical as to the power of medicine in the cure of disease, to give an example of a drug of really *healing* virtue, next to quinine, in ague, I should put forward the power of ipecacuanha over acute dysentery. I hail the revival of this method of treatment as a boon to suffering humanity. Gentlemen doing duty in the clinical wards of the Royal Victoria Hospital, have seen, even in some merely sub-acute cases, how well it answers the expectations of the physician. In treating the chronic forms of the disease, regard must be had to the complication, and great tact is required to adapt and combine the remedies to the peculiarities of the case. In all, dietetic measures should be carefully attended to. If there be a scorbutic taint, all the astringent remedies in the world will avail nothing until this condition of the blood be remedied.

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since 26th July last, viz.: —issuing quinine to every man who had had ague, in 5-grain doses just before morning parade. The following will show the results :—

During the 1st quarter there were admitted for fever 43 cases ; 2nd quarter, 54 ; 3rd quarter, 51 ; and 4th quarter, only 22 cases. This marked decrease has proved to me that quinine is a most valuable prophylactic taken at certain seasons in this Colony. I am pursuing the same course with the detachment lately arrived, with this exception, that I have reduced the dose to 2 grains, and I have not yet had a single admission for fever."—T. C.]

In like manner, if the patient's system is suffering from malarial cachexia, treatment adapted to that complication, such as I have already indicated, should go hand in hand with that directed to the local affection. No judicious physician will ever lay down for himself or others any mere routine system of treatment intended for indiscriminate use without regard to the specialities of each case. I have seen the best effects follow the judicious application of the "water compress" in chronic dysentery, if properly applied and perseveringly worn, it will be found very soothing. If the patient passes blood in any quantity, if there be much pain and tenesmus, if, in a word, there be any symptoms of a sub-acute kind, the patient should at once be confined to the recumbent posture, his diet should be restricted to the most nutritious but unirritating food, such as milk with eggs, and recourse should be had to a few full doses of ipecacuanha, these should not be pushed too far, and should be discontinued as the acute symptoms subside. Strong decoction of hæmatoxylum with lime water may be substituted. This after a time may give way to more tonic astringents, such as the preparations of iron, or small doses of quinine in combination with acetate of lead and opium, the latter in minute quantity. Gallic acid with Dover's powder sometimes answers well. The natives of India often use a powder composed of the finely-powdered stone of the mangoe fruit, which they give with fresh butter. If there be anything of a scorbutic taint, fresh fruit may be given freely. It is in such cases that the "grape cure" is successful. I may mention, however, that I once witnessed a distressing occurrence, suggestive of caution, in this disease in the use of fruit containing small seeds. A young officer, convalescing from an attack of acute dysentery, partook of some grapes—some days afterwards he was seized with all the symptoms of acute peritonitis, evidently from perforation; he sunk rapidly, and after death it was found that a grape stone having become entangled in an ulcer, the foreign body caused a minute pinhole perforation, through which some of the contents of the bowel escaped, causing peritonitis, and the patient's untimely death. Under the best possible management, and under the most favourable circumstances, recovery from this distressing condition is tedious, all the more if the case has been treated in a slovenly manner in the acute stages, and above all, if mercury has been employed as a means of "cure."

Chronic Rheumatism.—This is a costly source of disability, and India furnishes a large contingent to swell the list of military *rheumatics*. Soldiers in India overheated from any cause, are apt to expose themselves to any available current of cool air, with perhaps little covering but a thin pair of cotton trousers, and a shirt of the same material. Straying from barracks, they get intoxicated and sleep on the ground. Sometimes driven out of their barrack rooms by the intolerable heat and closeness of the air, they seek for refreshing sleep in the cold night air, and get chilled. In some of these and other ways rheumatism is contracted. and those who are most prone to suffer in this way, are the men whose systems are charged with the syphilitic or mercurial poisons, or both. The most obvious measures of prevention that suggest themselves are the introduction of light woollen clothing to prevent too rapid evaporation from the surface. The encouragement of temperance, the first step to which is the abolition of the spirit ration. Rendering the barrack rooms tolerable by diminishing the number of occupants, and the use of tarpauling for the floors of tents when troops are marching. Measures which will act as preventives, not of rheumatism only, but of many other diseases.

In the way of treatment the complication must be kept in mind, and remedies must be selected with an especial eye to that. Our main endeavour must be to excite the kidneys and skin to activity, while we at the same time supply the material for more healthy blood, and stimulate parts affected by morbid deposits to such healthy action as may lead to their removal. Here again we may take a hint from the system in force at the best of the water establishments; means of cure now so much associated in the minds of the profession with a system of quackery as to be distasteful. It is the business of rational physicians to separate the good from the evil, and not to suffer prejudice to come between our patients and a method of treatment that powerfully aids in stimulating to action two at least of the great eliminating organs. Guiacum, in combination with alkalies, iodide of potassium, or chlorate of potash, according to the nature of the case, and followed by some of the lighter preparations of iron, form the chief remedies to be used in aid of the means I have adverted to above.

Order II.—Enthetic Diseases.

It is not my province to notice either primary or secondary syphilis. These affections fall more legitimately under the care of my colleague, Professor Longmore. I cannot, however, pass the subject without recording my conviction that the time has come when the authorities must face this question. I offer no opinion on the best mode of dealing with it at home, and admit that the difficulties, religious, moral, and political in the way are neither few nor trifling. In India no such difficulties need be feared. I unhesitatingly say that good police magistrates, with the active co-operation of the chief military and medical officers in the various stations, would in a few years extinguish this plague. If any one is anxious to study the extent to which this disease prevails in the army, and the mischief it works, I recommend a careful inspection of the post-mortem records of Fort Pitt and Netley Hospitals, as kept by my colleague, Professor Aitken. They would there see a terrible confirmation of the saying that "the wages of sin is death." The ravages of the disease are evidenced by gummatous deposits on the calvarium, nodular deposits of various sizes and in all stages in lungs, liver, and spleen. Ulceration of the mucous membrane and glands of the throat, tongues deeply fissured, even the lining membrane of the great vessels does not escape, and doubtless aneurism of the arch can in many cases be fairly traced to the eroding action of this disease on its tissues. These are some of the modes in which this cachexia displays itself, constituting in itself a formidable malady, and co-existing, as it often does, with other diseases, a complication results so formidable as to bar all hope of successful curative treatment.

Purpura.—This affection in military practice is almost always found in men of intemperate habits. In my Annual Report on the Invalids admitted into the Medical Division of Fort Pitt, for 1862, I gave the details of three cases, all in men extremely intemperate, and I have just seen another, the subject of which, by his own confession, had "spent the whole of his pay in spirits for many years." The changes in the structure and functions of the liver and kidneys induced by intemperance, the mal-nutrition that attends the extreme use of alcohol, all tend to bring about a diseased condition of blood. In the case of Connel, reported in the Annual Report for 1862, the body after death maintained a high degree of temperature for many hours. I tested the temperature with a delicate thermometer 6½ hours after death, and found the temperature of the surface to be 67°, of the mouth and axilia 68°, although the body was on the floor of a very cold dead-house. Dr. Watson, in his Lectures, gives a fatal case of purpura in which there were indications, either of unusually rapid putrefaction after death, or of some degree of decomposition even before life was extinct. When the body of the woman was examined twelve or fourteen hours after death, a quantity of fœtid gas escaped from the cavity of the abdomen as soon as it was opened, and small bubbles of air were seen to ooze from the areolar tissue of various parts of the body. Even when incisions were made in the liver, air frothed up, as it might do under ordinary circumstances, from a section of the lungs. It is probable that the high temperature after death, in Connel's case, noted above, may have been due to some such process as that indicated by Dr. Watson, in the case of the woman reported by him.

The exact condition of the blood in purpura cannot be said to have as yet been determined with sufficient accuracy. It does not appear from the analysis of my colleague, Dr. Parkes, that either the fibrine or potash salts were deficient in two cases examined by him. Indeed in the second case examined by Professor Parkes, (*vide* 'Medical Gazette,' November 17, 1848), the fibrine was greatly in excess, a most unexpected result, which, however, was subsequently explained by the progress of the case, for a few days after the analysis was made the patient suffered from a sharp well-marked attack of articular rheumatism, and there can be no doubt that the increase in the fibrine was, as Dr. Parkes supposes, connected with the rheumatic diathesis. I regret very much that an accurate analysis of the blood was not made in Connell's case. Both Dr. Parkes' patients are reported to have been healthy-looking and robust, and with the exception of the rheumatic diathesis in the second case there was no disease but purpura present to complicate the inquiry. This was far from being the state of any of my patients, all of whom were intemperate and cachectic in the last degree.

The treatment, at least the successful treatment of purpura, in men who have long abused alcohol is almost impossible. Organic changes in the liver and kidneys have, in nine cases out of ten, attained to such a degree as to be beyond the reach of art, and little can be done except to palliate symptoms, to restrain hæmorrhage, and to deal as best we may with those intercurrent attacks of sub-acute inflammation of the pleura or low forms of pneumonia so apt to supervene when the kidneys are in such a state of degeneration as to perform their function imperfectly.

CLASS II.—CONSTITUTIONAL DISEASES. *Order I.—Diathetic Diseases.*

Anœmia.—The observations made under the head of malarious cachexy exhaust nearly all that I have to say on this affection as we meet with it in invalids from the tropics.

All patients suffering from malarial cachexy are anæmic. In the treatment of this condition, attention to proper clothing is a vital part of the treatment. Anæmic patients constantly tell me that on the voyage home they improve, and do well until they reach cold latitudes. The heat-generating powers of men in this morbid state are low, and in cold weather, unless protected by very warm clothing, they suffer miserably. Sir Ranald Martin has already called attention to the necessity of warm clothing for invalids returning from hot climates. They are prone to be attacked by bowel complaints, or to contract low forms of pneumonia, extremely difficult to treat. The treatment is mainly dietetic and hygienic. A varied and nutritious diet is required, with exercise in the purest air, sponging of the surface in the cold or tepid bath, the diligent use of the flesh brush or Turkish towel, and the long-continued use of the preparations of iron, the tincture of the acetate, with chlorate of potass, phosphate of iron, &c., &c.

Order II.—Tubercular Diseases.

Out of 1,102 cases of phthisis pulmonalis admitted in the last two years into the Invaliding Hospital at Fort Pitt, 195 came from India. The causes tending to develope this disease among soldiers, are quite as rife in Indian barracks as at home. My experience of phthisis in India satisfies me that, in the first stages of the disease, the progress is slower than at home; but that when the stage of softening is reached, destruction of lung tissue goes on much more rapidly than in cold climates, and this is particularly the case in women. Nowhere is the term "galloping consumption" more appropriate than in the case of young women arriving in India with even a limited portion of lung tissue charged with tubercles in the third stage; such cases, as I have too often seen, hasten to a fatal termination with a rapidity truly appalling. On the other hand, if phthisical patients arrive in India at a sufficiently early period, before tubercular matter has been more than sparsely distributed through the lungs, for the most part they do well, provided always they are not exposed to the ill effects of barrack life, overcrowding, impure air, &c., &c. I can call to mind many examples, both of men and women, members of phthisical families, who have done well in India, when all the other members of their families have been prematurely cut off at home. The most trying time for phthisical patients in India, is during the prevalence of the hot land winds: profuse hæmoptysis is then apt to occur. I have often at such times sent them to sea with advantage, or, where this was not possible, kept them in an atmosphere kept moist by artificial means.

In both my Annual Reports I have entered pretty fully into what I believe to be the causes most instrumental in developing phthisis in the army; but as these have no special reference to tropical cases, I do not repeat my observations here.

CLASS III.—*Order IV.—Enteric Diseases.*

Hepatitis Chronic.—When we remember that, next to the zymotics, hepatitis is the most destructive disease in India, we need not wonder at the large number of invalids presenting themselves with hepatic affections, amounting to no less in the last two years than 321. These are to be found in our returns chiefly under the head of hepatitis chronica ; in this head are included livers enlarged from the effects of malaria, and those waxy or lardaceous livers, which are often found in the syphilitic dyscrasia, as well as true cases of chronic hepatitis, in which the gland has become enlarged, first from congestion, followed by inflammation of the parenchyma, with deposition of lymph in the areolar structure surrounding the portal vessels. The pathological museum at Netley is rich in specimens of syphilitic livers, showing puckered radiated-looking depressions, consisting of thick tendinous-looking fibrous bands, extending to a greater or less depth into the substance of the gland, and at our *post mortem* examinations appearances of this kind are seen almost daily. On making sections of livers so affected, we often find nodular deposits varying in size from a small pea to a large marble, and even larger, and in all stages of softening. In a case lately examined at the Royal Victoria Hospital, in a man with a distinct venereal history and of most intemperate habits, some of these bosses projected on the concave surface of the liver in a fungous-like manner, and from one of them considerable hæmorrhage had proceeded. In such cases there is often intense reaction with iodine, giving evidence of the so-called " amyloid degeneration."

At a *post-mortem* examination at the Royal Victoria Hospital, Netley, a few days ago, I heard a remark made to the effect that in invalids from India we seldom see specimens of "gin drinker's liver," so common in the London Hospitals. The remark was correct, and the explanation of it simple ; drunkards in India for the most part die before there is time for such a state of the organ to be produced—they are cut off by a more acute process. We are rarely without cases of men convalescing from hepatic abscesses that have discharged either by the lungs or the bowel. On the other hand in two years and a-half I have only seen two cases among our invalids in which evident cicatrices showed discharge of the abscess through the abdominal parietes. The surest possible proof, not of the rarity of such an occurrence, but of a successful issue. This is the best answer possible in reply to those who are attempting to revive the practice of exploring the liver with instruments in search of purulent matter as soon as the constitutional symptoms of its formation are present, with the intention of discharging it by external opening. I have elsewhere pointed out that if so meddling a practice becomes general, fewer cases of liver abscess will recover than under the present system of non-interference. For such operations must result in establishing a direct communication with the external air, thus depriving the patient of the chance of the safer route of discharge by lung or bowel, to which the efforts of nature may be tending.

It is obvious, after what has been said, that it is impossible to lay down any system of treatment applicable to all cases of so-called "chronic hepatitis." Regard must be had in the management of such affections to their individual peculiarities, and to the particular dyscrasia under which the patient is suffering, whether that be malarial, scrofulous, or syphilitic. In the two first, pure air, attention to the digestive organs, good food, and a long continued course of blood depurants, followed by iron in some of its numerous combinations are indicated. The waters of Homburg are recommended in such cases, and not without good reason. In cases of a lardaceous syphilitic nature, we must be guided to a diagnosis by a consideration of the patient's history. In such cases, as well as in the former, we find the spleen also enlarged, and giving signs of impaired function. Rarely does it happen that the kidneys are not implicated, as we see in the frequent presence of albumen in the urine. Advanced waxy liver being essentially a degeneration of the glandular cells, is a most serious affection for the patient, it is destructive of function, and, in an advanced stage, not within the power of any remedy with which I am acquainted. Little impression can be made on an organ in which circulation and secretion are so grievously impaired as in this disease. The anæmic and cachectic condition of patients in an advanced state of degeneration in so important an organ, is more easily explained than remedied. The pathology of hepatic diseases, although in many points still obscure, and requiring further elucidation, is sufficiently advanced to render inexcusable the treatment by mercurials, still too much the only resource of routinists who treat disease merely under the guidance of names. When our countrymen in India can be induced to adopt a system of diet more adapted to the circumstances and climate in which they are placed, when temperance is more the rule of life than unhappily is now the case, when venereal poison is banished from the station bazaars, where it is now permitted to riot without a check, when men in India shall drink pure water and breathe a purer air in barracks, military physicians, whose lot is cast there, will find their labours lightened, and those whose duty it is to deal with men invalided home, will find the chronic forms of tropical diseases less complicated, and more amenable to remedial measures than is the case at present.

EXTRACTS FROM ANNUAL REPORT.

(To accompany Annual Return of Sick in the Medical Division of Fort Pitt General Hospital, from 1st January to 31st December, 1861.)

By W. C. Maclean, M.D., Deputy Inspector-General, and Professor of Clinical and Military Medicine, Army Medical School, Netley.

Summary.

Remained, 31st December, 1860	51
Admitted during the Year	1,993
Discharged	1,884
Died	51
Remaining 31st December, 1861	43
Of the discharged were fit for duty	229
Of the discharged were invalided	1,655
Transferred to surgical division	5
Transferred to Lunatic Hospital	7
Transferred to Yarmouth	54

Excluding garrison patients, the admissions during the year exceeded those of 1860 by 711.

Table 4 shows that of the admissions amounting in all to 1,993.

Home Stations furnished	1,146
India	469
China	107
Mediterranean	167
Cape of Good Hope	42
Mauritius	9
West India Isles	8
Australia and New Zealand	25
British American possessions	20
Total	1,993

The number invalided was considerable, amounting to 1,655. It is certain that out of this number some might, in time, have become effective, had it been possible to keep them sufficiently long at Fort Pitt; but, as the authorities are well aware, the hospital accommodation there is so limited, and the pressure so great, that any attempt at such a proceeding on a large scale would bring the business of invaliding to a standstill, and cause the utmost confusion. Between May and October invalids pour in with such rapidity that it becomes a matter of necessity to dispose of them with as little delay as is compatible with their state of health. Moreover, the authorities having expressed a desire to reduce the strength of the army, commanding and regimental medical officers naturally embraced the opportunity of getting rid of men who were probably more frequently seen in hospital than on parade.

It will be seen that rheumatism, phthisis pulmonalis, epilepsy, diseases of the heart and those of the respiratory system, chiefly chronic bronchitis, make up 1,451 of the admissions for the year, or 72 per cent. of the whole.

The admissions from phthisis pulmonalis amounted to 629, exceeding those of the previous year by no less than 407, or, excluding 27 returned to duty either because the invaliding officer was not satisfied with the diagnosis, or did not think the cases sufficiently pronounced to warrant him in discharging the men from the Service, by 380. Of the 629, 577 were invalided, 29 returned to duty, 34 died in hospital, 4 were sent to Yarmouth, and the remaining 12 were in hospital on the last day of the year undisposed of.

The admissions under the head of diseases of the circulatory system were also very large, amounting to 338; of these 314 were invalided, 18 returned to duty, and 6 died in hospital. Thus, still excluding patients sent to Fort Pitt from the garrison, and those undisposed of at the end of the year, no less than 931 were lost to the Service from pulmonary consumption and diseases of the circulatory system, chiefly valvular disease of the heart and hypertrophy,—that is, a number equal to a strong battalion.

I must not omit here to add, that, although obliged by the necessity of following the new nomenclature to enter a number of the cases as "disease of the valves," a considerable number presented no positive evidence of valvular disease at all—that is, no abnormal *bruit* was present. The disease was what, in the present state of our knowledge, we must call functional; the action of the organ being excessive even where the patient is perfectly tranquil, and on the slightest exertion so distressing as to force him at once to discontinue it. Whether or not the heart recovers, becomes more measured and tranquil in its functions when the sufferer has been for some years restored to civil life, I am not able to say. This much is certain, men so affected are unfit for military duty, and do not recover so long as they continue to be soldiers. Some are inclined to think that excessive indulgence in smoking has something to do with inducing this inordinate action of the heart, but I have seen nothing to satisfy me that young soldiers indulge more in tobacco than men of the same age in civil life.

Of the cases of consumption, 219, had barely served three years. Indeed, although this number is classed under the head "Three years and under," more than three-fourths of them had not completed two years' service,—if such a term can with justice be applied to a period of time spent almost entirely in hospital.

The same may be said of the cases of heart disease; 106 of them came under the head of "three years and under," of merely nominal service. I know no question connected with the health of the Army that more loudly calls for attention on the part both of the military and medical authorities than the prevalence of consumption and heart disease among our young soldiers. It must be kept in mind that the figures before us refer only to that portion of the Army whose invalids are sent to Fort Pitt for disposal; they exclude the whole of the Artillery, Foot Guards, and Household Cavalry, and the troops serving in Ireland, to say nothing of the men who die from the acute forms of these affections in regimental and depôt hospitals at home and abroad. There must be some cause or causes in operation not yet reached by the many sanitary and other improvements introduced into our military system of late years.

The Professors of the Army Medical School at Chatham are deeply impressed with the importance of the subject; and, in a paper submitted to the Director-General of the Medical Department,* have given it as their opinion that there is something defective in our way of dealing with the young soldier on first initiating him into military life. When we consider the difficulty and cost of recruiting in this country under the voluntary system, it is peculiarly incumbent upon us to husband the personnel of our army.

The great military powers of Europe, by means of the conscription, have nearly the whole population at their disposal for military purposes; and they can and do, in the examination and selection of recruits, apply their recruiting rules with a stringency which in this country, under a voluntary system, is practically impossible,—at least in times of pressure. It is well known that the moment an occasion arises when England is called upon to put forth her resources in men, we soon reach the point when they must be raised by the temptation of increased "bounty," when this is reached a relaxation of the wholesome stringency of the recruiting regulations becomes, in the opinion of the military authorities, necessary. Not only is the standard of height lowered, but Medical Officers are warned not to look too narrowly at defects in those submitted for medical examination prior to enlistment. Nor does the evil stop even here. At such times there is a very natural anxiety to press forward the young soldiers in their military exercises, that they may be ready in as short a time as possible to fill up voids in the ranks caused by the casualties of war. The recruits are thus handed over to zealous, well-meaning adjutants and drill-serjeants, who either do not know, or are obliged to forget, that they have to deal with comparatively tender and immature frames; and the result undoubtedly is, the "strength" so obtained is purely fictitious. An immense proportion of the immature lads thus injudiciously handled only encumber the hospitals, and either perish prematurely, or are thrown out upon the civil population with one or more of their vital organs irreparably damaged.

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* [This subject has been, and still is under the consideration of the authorities.—T. C.]

The exigencies of modern war require great rapidity of movement and sustained exertion on the part of the soldier, and in the French army at this time we see that no pains are spared to train him up to the point at which he can execute the most rapid movements at the smallest expense of suffering, he is not when a conscript left to the mercy of a drill serjeant, but is carefully, step by step, put through a course of gymnastic exercises regulated by competent men. We want in military life in this country in the training of our recruits, some of that skill and system which is carried out with so much pains by the trainers in racing stables, and until this is done in a regular systematic way, we must be prepared to see year after year, a large proportion of the youths who enter the ranks of the army break down like those whose recent discharge from the service has suggested these observations.

Considerations such as these led the Professors to address the Director-General on this important subject, and have induced me to revert to it in this report; there can be no doubt that the subject of dress and accoutrements has a direct bearing in the production of diseases of the circulatory system, which figure so largely in these returns. Some years ago a disposition was evinced to loosen the soldier's jacket and tunic, a "movement" hailed with pleasure not only by sanitary reformers, but by the soldier himself; but of late we appear to be gliding back into the old system. Men are thought to look better in tight fitting tunics than those in which give more play to their organs; certain it is that commanding officers, or those who regulate such matters, are falling back on the tight fitting coat; nor is this all, I have been informed by military officers in this garrison, gentlemen of great experience and observation, that the practice of drilling men in heavy marching order, or at least with the pack on, is becoming more common than it was in their early years. Now our system of carrying this pack is on all hands allowed to be the very worst possible. By it the weight the soldier has to carry is placed in a position the most disadvantageous to him, the straps press severely on the vessels and nerves in the axilla, causing swelling and numbness of the arms, while the cross-belt, passing as it does diagonally across the chest, interferes with the forward movement of the ribs during active exertion, greatly distressing the soldier, and plainly interfering with the free play of the organs of circulation and respiration.

In France and Prussia this subject has been most carefully considered, and improvements have been introduced in the way of carrying both pack and ammunition that have left us far behind.

Epilepsy.—One hundred and seven epileptics passed through Fort Pitt last year, being only one less than in the previous year, which seems remarkable. The number appears very large. It is probable that a large proportion had suffered from the disease before they enlisted. 51, or very nearly one half of the cases, are classed under the head of "three years and under" of service. We are driven to conjecture on this point, for no class of invalids coming to Fort Pitt bring with them so meagre a medical history as epileptics. For the most part it is nothing but a certificate to the effect that the patient has been seen in a "fit' by a Medical Officer, and often even this statement is wanting. From the men themselves little information is to be obtained, having been at some pains however to inquire, I have little doubt that in a large proportion of the cases the disease had been present in childhood, had become dormant, and under the unfavourable influences of barrack life had re-awakened into a state of activity. I have, in India, seen examples both among officers and men of epilepsy which had been dormant for years, awaking again under the apparent operation of causes of a depressing kind, as malaria, scorbutic, and mercurial cachexia and the like, and excessive indulgence in sexual intercourse. A very good example of this disease reappearing again under the influence of mercurial cachexia was seen in the medical division last summer. The part played by venereal disease in causing this affection is one of peculiar interest; but, in the absence of any correct medical history of the patients, I am unable to throw any light on this subject from the cases that have passed under my observation here.

Chronic Dysentery.—The admissions from chronic dysentery amounted to 86, and, as 1 remained from the previous year, 87 are to be accounted for. Of these, 56 were discharged invalided, 12 returned to duty, 3 died, 9 were sent to Yarmouth, and 2 to Lunatic Asylum Hospital.

Home stations furnished 29 of these cases (most of whom, however, had served abroad), 35 came from India, 17 from China, 3 from the Cape, 1 from the Mauritius, and 1 from Australia.

In nearly all the cases received from on board ship there was more or less of a scorbutic taint.

The treatment of patients labouring under chronic dysentery at sea requires much care and attention on the part of the Medical Officer in charge. On first getting to sea, the majority of the cases improve; but if the convalescing patients be put upon the ship's ration the improvement is short-lived. Most dysenteric cases from the tropics are from localities more or less malarious, and the blood of all such patients is in a condition peculiarly liable to undergo scorbutic changes. The diet of such patients should therefore be most carefully attended to; salt meat should enter into it very little, if at all, and lime-juice and preserved vegetables should be liberally supplied. I am of opinion that maccaroni might be very advantageously added to the list of hospital comforts on board ship for invalids, or, better still, the plan about to be introduced into the Royal Navy of issuing fresh bread to the seamen should be extended to transports for invalids.

Patients who suffer from dysentery and are at all scorbutic, or who have been subjected to mercurial treatment, cannot use hard ship-biscuit, and for them macaroni would be a portable and good substitute. Then the utmost attention should be paid to their clothing on approaching higher latitudes; and in all transports for sick soldiers provision should be made to enable dysentric patients to obey the calls of nature without exposure, particularly in wet weather or at night. I have been an eye-witness to severe suffering and great aggravation of their complaints in the case of convalescents obliged to resort to the ship's "head" without shelter for such purposes.

I cannot refrain from here entering my protest against the abuse, and even use of mercury in any form of this disease. I believe from long experience and close observation, that even in the acute form the exhibition of this drug is pernicious, and that just in proportion as the practice of administering it has fallen into disuse in India, so has the mortality diminished. But whatever may be said in favour of the use of mercury in dysentery, in men labouring under the disease with their constitutions comparatively unimpaired, it is impossible to justify its use in those wasted and worn down by the disease, with their blood depraved by prolonged residence within the tropics, and perhaps scorbutic besides. This is so obvious that I should be ashamed to insist upon it here, were it not that during the past year we have had a by no means inconsiderable number of dysentric patients admitted into Fort Pitt in various stages of ptyalism, and I have had occasion in my clinical teaching to point out to the young officers under instruction in the wards, the disastrous consequences of the practice. While on this subject, I cannot refrain from adding my testimony to that already laid before the Director-General on the efficacy of the revived practice of treating dysentery by large doses of ipecacuanha; the practice has been familiar to me for more than twenty years, having seen the late Dr. Mortimer follow it in the General Hospital of Madras twenty-two years ago, with signal success, at the time when the mercurial doctrine of the late Dr. James Johnson prevailed in India. I have seen its revival in Southern India with great satisfaction and the best results, and many Medical Officers doing duty at Fort Pitt during the past year have seen it used with the happiest effect in cases where the disease had taken on a sub-acute form.

Cephalœa—Under this head we had 30 admissions; of these 23 were discharged invalided, 3 to duty, 1 was transferred to Yarmouth, 2 to Lunatic Asylum Hospital, and 1 remained at the end of the year.

Of the above, 8 were from India, and the symptoms followed sun-stroke; of all the sequelæ of insolation this is the most troublesome, persistent, and difficult to treat. Some of the patients were kept for a considerable time in hospital, and subjected to every plan of treatment that afforded a rational hope of amendment—with, in the majority, little benefit of a lasting kind. I particularly allude to one case, that of Private Henry Randell, of the Cape Mounted Rifles. This man was admitted from Canterbury, he had been under treatment since May 1858, at the Cape and in this country. His sufferings were extreme, and even when he was under the influence of a soothing draught, he was rarely free from acute pain.

He had been struck down by the sun at the Cape of Good Hope in 1854; was unconscious for 48 hours, and from that time to the day of his discharge from Fort Pitt, on the 19th of June, 1861, he complained of a fixed pain over the vertex which seldom left him entirely, although it was more severe at certain times than at others, particularly on bright and hot days. Tonics, sedatives, counter-irritation, and free discharge by a seton in the neck, the persevering use of the douche, a course of iodide of potassium and other remedies, all failed, and he went finally to his home unrelieved.

Authors on sun-stroke do not mention this persisting headache as having come under their observation, but most of the writers on *Insolatio* describe the disease in the acute form. There is reason to believe this form of cephalæa is dependent on some organic change not yet known. In the case of Randall it is noted in his medical history, that before the fixed pain in the vertex became so severe as it was on his admission here, he had suffered much from rheumatism, and for this he had taken several courses of iodide of potassium.

The last part of the return on which I have to remark, is the table of casualties, amounting to 51, of which the following is a summary:

Zymotic Diseases	.. Dysentery Chron. ..	3
Diathetic Diseases	.. Phthisis Pulmo. ..	31
Local Diseases	.. Paralysis	1
Diseases of the Circulatory System	Morbus valv. Cordis ..	3
	Aneurisma	3
Diseases of the Respiratory System	Bronchitis Chron. ..	2
	Pneumonia	1
Diseases of the Digestive System..	Hepatitis Chron. ..	2
	Splenitis	2
Of the Urinary System	.. Nephria	3
	Total	51

Illustrative Cases.

Zymotic Diseases. *Dysenteria Chron. Cum Nephria.*

Regiment.	Rank.	Name.	Age.	Disease.	Date of last Admission.	Date of Death.
91st	Private	Patk. John Olivant	29	Dysentery chr.	Aug. 26, 1861	Sept. 8, 1861

Stated in abstract to be of a scrofulous diathesis, and to have been in hospital eleven times since 1856, viz., from May 17th to 30th, with primary syphilis; in August 1856, with acute dysentery; in August and September 1856, with febris continua; luxation of right elbow, September and October 1856; ulcus, May 1857; phlegmon, June 1857; ulcus, November and December, 1858; dysentery acut., February 1859. Was attacked with acute dysentery in India in 1858, was sent to England, and has been in Yarmouth for fifteen months. On admission complained of constant purging of dysentric stools, of which he has rarely less than seven in twenty-four hours, with severe straining; is greatly debilitated and cachectic. There is œdema of feet and legs; has spat blood; urine loaded with albumen. Treatment up to date of admission consisted in the use of laxatives, followed by cretaceous mixtures, with catechu and opium. *Mercurials* to ptyalism, ipecac. with gentian and opium; quinine in combination with iron; opium with gallic acid; decoction of bael, &c., with counter-irritation to the abdomen. Both spleen and liver were evidently enlarged; urine sp. gr. 1009. Nitric acid and heat threw down a dense deposit of albumen.

The case, sufficiently unpromising without disease of the kidney, was made hopeless by that serious complication; and, spite of careful treatment, attention to support, and all the means affording any rational hope of improvement, the case went from bad to worse, until the 8th September, when he sunk.

POST-MORTEM EXAMINATION 86 HOURS AFTER DEATH.

Legs and scrotum œdematous.

Brain, 3 lbs. 4 oz.; hard, normal.

Chest.—Lungs, 5lbs. 4 oz.; apex of each lung consolidated with tubercular matter; both lungs considerably congested; no cavities.

Pericardium contained 2 oz. of clear, colourless liquid.

Heart, atrophied; weight, 10 oz.; coated externally with a dense layer of fat.

Dimensions.

Apex to groove, 3 inches; aur. ven. groove to apex, 2½ inches; transversely at aur. ven. groove, 1 inch; diameter of left auricle, 1·4 inch; diameter of right auricle, 1·5 inch; aorta diameter, 9 inches. Muscular substance relaxed.

Abdomen.—Peritoneum and stomach normal; small intestines seemingly healthy.

Colon: cicatrices of ulcers in tranverse colon. Liver: weight, 3 lbs. 15 oz.; fatty degeneration, with isolated granules. Spleen enlarged; weight, 13 oz., congested; structure very friable. Kidneys both enlarged, right, 11 oz.; left, 13½ oz.; fatty degeneration of substance.

This patient, from first, had a constitution ill adapted for military life anywhere, but particularly in the tropics. He was a bad subject for mercurial treatment; whatever may be said in favour of the use of mercury in the treatment of dysentery in men of sound constitution,—and in my judgment the less it is used even in such favourable cases, the better,—its use in men, of a strumous diathesis is very unadvisable; with the complication of nephria as in this case, its use cannot be too strongly reprobated.

CONSTITUTIONAL DISEASES.

Phthisis Pulmonalis. Death from Hæmorrhage apparently from Aneurism of Pulmonary Artery.

Regiment.	Rank.	Name.	Age.	Disease.	Date of last Admission.	Date of Death.
59th	Private	Wm. Westwood	25	Phthisis pul.	Oct. 8, 1861	Nov. 21, 1861

This man had four years of completed service.

Began to suffer from cough in January 1859, when on a voyage from China to the Cape; was also treated for enlarged spleen, which appears to have subsided. In August 1861 had an attack of pneumonia, with symptoms of phthisis, which became confirmed, according to the abstract sent from Chichester. He was losing flesh, and becoming day by day more debilitated.

On admission the following was his condition: looks cachectic, and is greatly emaciated, and reports that he spits blood; right lung, dulness over the apex, with harsh respiration; left lung, marked dulness under left clavicle; respiration bronchial, gurgling râles heard over large portion of left lung; has cough and purulent expectoration, and is hectic.

October 29th—An attack of hæmoptysis, which yielded to treatment. November 1st—A second attack. November 3rd—A third attack of hæmoptysis. November 15th—A feeling of constriction around the chest, râles audible over the right side, followed by severe hæmoptysis, when about two pints were lost. Under gallic acid it ceased completely; so much so that, until the 21st, the sputa had no tinge of blood. On the 21st, chest was dull on percussion, particularly under left clavicle; moist râles were audible all over the chest. Got up suddenly to go to stool; being very weak, he sat down with a concussion, a gush of blood instantly flowed from his nose and mouth in such quantity as to suggest the idea of an aneurism having burst; coagulation of blood in the air-passages quickly followed, and in less than three minutes death from asphyxia took place.

Post-Mortem Examination.

Chest.—Flatness very marked over left side of chest generally, but especially below left clavicle; larynx and trachea contained a dark coagulum of blood moulded into the form of the laryngeal pouches and folds. Bronchi filled throughout both lungs with coagulated blood and fluid serum. Lungs: right lung does not collapse; some fluid blood in the tubes, with frothy mucus; the left lung presented a series of excavations from the apex to the base—its substance was generally consolidated by a deposit of pearly whiteness; trabeculæ with small cavities in all directions; three cavities were especially obvious, each containing a tumour of a globular form; one measured 1 5-10 inch in diameter, the two others about 5-10 of an inch. These tumours were enveloped by dark-coloured coagulæ, which filled up all the interspaces between the trabeculæ as well as spaces between the walls of the pulmonary cavity and the external aspects of these globular swellings; the walls of the tumours are extremely thin, their outer aspect covered with fibrous films; their inner surface presents a white shining appearance like the surface of an artery (pulmonary ?); they contain no blood other than is seen in the pulmonary artery itself, *i. e.* streaks of fluid blood in the folds of the collapsed tissue. Alcohol was injected into a branch of one of the pulmonary arteries, the globular swelling (one side of which had collapsed) became distended with spirits, and, so distended, the whole lung was left to get firm in alcohol for future examination.

The two other globular swellings were removed, their attachments being so delicate and circumscribed that their removal was almost accidental. A microscopic examination of their inner aspect showed that they were lined by an extremely delicate pavement epithelium, composed of polygonal particles having a granular aspect, but the margins clear and well defined under a power of 350 diameters.

Abdomen.—Peritoneum, stomach, and intestines normal. Liver normal; no reaction with iodine. Spleen, weight 22 oz., splenic pulp soft, no sacculi visible: pulp so diffluent that it can be washed out to a considerable extent; no reaction with iodine.

Phthisis Pulmonalis. Death from Hæmoptysis.

Regiment.	Rank.	Name.	Age.	Disease.	Date of last Admission.	Date of Death.
44th	Private	James Haywood	37	Phthisis pul.	Nov. 20, 1861	Nov. 26, 1861

Served in India, Ceylon, Crimea, and at home; completed service, 18 years.

Was invalided from Ceylon in 1858 for ophthalmia; up to that date had been healthy.

Admitted from St. Mary's 20th November, 1860. Stated in abstract that twelve months ago he got very wet on recruiting service, followed by pain in the left side of his chest, with cough; little or no treatment then. Was in hospital at Calcutta in the early part of 1861, and treated for hepatitis—at that time had cough and dyspnœa. Did every duty till October, when he was again admitted into hospital, when he was treated for bronchitis chron. On admission, complained of severe and frequent cough, with copious expectoration, which is said to be frequently bloody; has dyspnœa and night sweats. Physical signs.—Looks very cachectic; right side, dulness in apex and bronchophony; left side, great dulness in apex, and large crepitation; in lower lobe, absolute dulness and no respiratory sounds; posteriorly small crepitation; heart's action quickened. November 25th. Apparently improving a little under rest, good diet, cod liver oil, and iron: expressed himself as feeling much stronger. 26th.—Suddenly seized with hæmoptysis after dinner, and died of asphyxia in a few minutes, having discharged about a quart of blood from mouth and nose.

POST-MORTEM EXAMINATION 69 HOURS AFTER DEATH.

Head normal; trachea, dark coagulum of blood in trachea; pleura, 14 z. of fluid in left side of chest, adhesions both old and recent; signs of recent lymph in cavity of left pleura; bronchial glands greatly enlarged at the bifurcation of tracheæ. Lungs: a cavity of very irregular form extends from the apex to nearly the base of left lung, crossed by trabeculæ of pulmonary vessels. Heart, form normal; white appearance on anterior aspect.

Dimensions.

Base to apex, 5·2; aur. ven. groove to apex, 4·1; transversely at aur. ven. groove, 3·7; right aur. ventric orifice, diameter, 1·45; circumference, 4·55; left aur. ventric orifice, diameter, 1·32; circumference, 4·15.

Abdomen.—Spleen enlarged, pulp pultaceous, with dark coloured deposits in its substance; no reaction with iodine. Liver slightly enlarged; other viscera healthy.

DISEASES OF THE CIRCULATORY SYSTEM.

Aneurism of Arch of Aorta. Sudden Death.

Regiment.	Rank.	Name.	Age.	Diseases.	Date of last Admission.	Date of Death.
40th	Private	Isaac Hughes	..	Aneurisma	Aug. 2, 1861	Sept. 16, 1861

During last year was several times in hospital at Hobart Town, Australia, with influenza and catarrh, and greatly worn out. Received a slight gunshot injury in 1843 at Maharajapore, in India, from a spent ball, but experienced no subsequent inconvenience.

When in India had now and then been treated for palpitation of the heart.

On admission, greatly emaciated; great distension of the superficial veins of the upper part of thorax, especially on left side; chest flat and narrow; between 3rd and 4th ribs, at the right edge of the sternum, is a tumour, pyramidal, and of the size of a pigeon's egg, which communicates a distinct and forcible pulsation to the hand. The chest is markedly dull on that side and the breathing very tubular; left lung healthy. The heart's sounds normal, but heard over the whole chest. The diagnosis of aneurism of the the ascending portion of the arch of the aorta is borne out by the symptoms, but the absence of bruit is very peculiar.

August 10th—The tumour greatly increasing in size, and its pulsation more evident. On expansion of the chest the tumour remains where it is, and a marked depression forms round it.

August 14th—complains of cough. August 18th—cough increasing. August 20th—Bronchial râles all over the chest. August 22nd—Complains of weakness and pain in the tumour. September 15th—Continues much in the same condition; no visible change; appetite good. September 16—At 8 A.M., in trying to get up from bed, sank back, and died suddenly.

No *post-mortem* examination allowed.

Aneurism of Arch of Aorta. Death before Rupture of Sac.

Regiment.	Rank.	Name.	Age.	Disease.	Date of last Admission.	Date of Death.
1st Bat. 24th	Serjeant	George Dibdon	42	Aneurisma.	June 23, 1861	June 24, 1861

Completed years of service, 20, 14 of which in India, where he suffered from diarrhœa and intermittent fever in 1855; in 1856, febris intermit.; in 1858, dyspepsia; in 1859, rheumatism chron.; in 1860, asthma.

Was, during the mutiny, much exposed to solar influence on field-service, by which his constitution was greatly affected. For some months previous to his departure from India relieved from active duty, for which he was, from long service, unfitted, and attached to the Barrackmaster's Department. Suffered during last year a good deal from asthma, apparently unaccompanied by any derangement of the heart's action.

Was recommended for change of air to England.

Admitted from St. Mary's, 23rd June, in so exhausted a state as scarcely to admit of a proper examination. Stated, with difficulty, that he had been pretty healthy till about two years ago, and fond of athletic exercise. At that time, without any apparent cause, began to experience palpitation of the heart and difficulty of breathing. About a month previous to admission, the palpitation and pains became more evident on the right side of the sternum. A tumour was discovered over the cartilages of the 3rd and 4th ribs of right side, of the size of half an orange, pulsating forcibly about an inch from the middle line of sternum, through the third intercostal space. It also caused great pain from pressing on the œsophagus. Patient had also a sense of suffocation about the larynx; feels most at ease when lying on his right side, almost on the front of his thorax. Vomits when he attempts to take food; radial pulse scarcely perceptible, but equal on both sides; quite helpless. Died 28 hours after admission.

POST-MORTEM EXAMINATION.

Pleura.—Adhesion of pleura on left side, with considerable vascularity at the posterior edge, and also anteriorly attached to the pericardium.

Lungs.—Anterior margin of right lung attached to aneurismal sac. The left lung did not collapse. The trachea had an ulcerated opening, communicating by a valvular aperture, with a purulent collection infiltrated between the œsophagus and bifurcation of trachea. Through this aperture, a clear red, jelly-like mass, exceedingly tenacious, could be traced for some length into the œsophagus, and the whole of the tracheal tubes were filled up with this jelly-like exudation down to the extremely minute ramification in the substance of the lungs. Microscopically, it was mainly composed of flattened and circular cells, with a large quantity of ciliated cylindrical epithelium. Weight, 2 lbs. 8 oz.

Pericardium contained 8 ozs. of dark, brownish-coloured fluid.

Dimensions.

Heart.—Base of apex, 5·9 inch; aur. ven. groove to apex, 4·5 inch; transversely at aur. ven. groove, 4·0 inch.

Circumference of Orifices.

Right auric. ven., 12:5:226; pulmonary artery, 9:3:705; left auric ven., 10:4:145; aortic orifice, 7:2:889; pulmonary artery flattened against surface of aneurism.

Aorta—Aneurism of arch, externe; breadth of aneurismal tumour, 5·7 in.;

thoracic aorta in a state of steatonatous degeneration. Muscular substance in a state of fatty degeneration, soft and fatty; other viscera normal.

Aneurism of Arch of Aorta. Death from Rupture of Sac.

Regiment.	Rank.	Name.	Age.	Disease.	Date of last Admission.	Date of Death.
78th	Private	Michael Quin	35	Aneurisma.	May 3, 1861	May 18, 1861

"Caught cold on detachment-duty at Greenlaw, in Scotland, in October, 1860. Has since suffered from dyspnœa at times so urgent as to threaten suffocation. Cough frequent, with thick mucus expectoration; percussion clear, but at times the natural murmur is drowned by the loud, moist râles and sibilant sounds all over the chest; bronchophony more distinct on left side; respirations frequent, at times 30 per minute."

On admission (at Fort Pitt, for discharge from service), there was very urgent dyspnœa, so much so that he could not bear the recumbent posture. Face and lips were dark and congested, with a very anxious expression. Large moist crepitation heard all over the chest The dyspnœa, profuse expectoration, and other urgent symptoms, diminished, and after some day's treatment he became comparatively easy.

On the 18th May, while sitting by the fire, he suddenly brought up about a pint of blood, and almost instantly expired.

Post-mortem Examination.

Bronchi.—Intense congestion throughout, with frothy mucus on surface of membrane. Two ulcerated openings into trachea from aneurism of the aorta.

Lungs.—Irregularly injected with blood, which has passed into the minute air-cells in some places, otherwise the lungs are healthy; and at the apex of left there is loss of substance and a cicatrix, as if the remains of tubercular deposit which has thus healed.

Dimensions.

Heart.—Base to apex, 5·08; aur. ven. groove to apex, 3·43; transversely at aur. ven. groove, 3·44; thickening ventricle, 1 inch.

Aorta.—An aneurisma, about the size of a hen's egg, between aorta and trachea, and which has opened into the trachea by two ulcerated apertures.

Viscera otherwise healthy.

Remarks.

The only symptom present in this case, as in so many of a like kind, to excite suspicion of aneurism of the aorta "pointing" towards the trachea, was the characteristic position there was in this case, even after the loud bronchitic râles had subsided, not a single physical sign pointing to the true nature of the disease. The patient was observed, even when the acute bronchitis had been subdued, to sit with his head inclining downwards and forwards, to take the pressure of the swelling off the trachea.

Diseases of the Nervous System.

Epilepsy, with rapid movement of the head from side to side.

Regiment.	Rank.	Name.	Age.	Disease.		
49th	Private	Henry Brassington	30	Epilepsy.		

This man brought no abstract of his case with him; the following history has been obtained from himself with some difficulty:—

Was an epileptic in his youth, at the age of 12 the disease left him, and did not appear again until the 9th of April, 1860. He had deserted from his regiment and was working in a coal pit, when a piece of coal falling from above struck him on the vertex, causing insensibility, which lasted for two days. He was not paralysed after the accident; but as the wound healed a swelling appeared. This tumour, which occupied the exact site of the blow, slightly to the left of the middle of the sagittal suture, is about the size of a Spanish nut, and is hard and resisting; but the patient is so irritable that he is very impatient of any handling of the swelling, and is very apt to fall into an epileptic paroxysm if it is handled (a subsequent examination showed, however, that it was an encysted tumour, and not, as was at first supposed, an osseous growth).

The fits now returned frequently, attended with headache and vertigo, and in the middle of last December (eight months after the injury), having been made a prisoner, he was confined in the barrack guard-room in the very cold weather of December, 1860, when he was seized with rigors and fever; while suffering from the febrile attack he was first seized with a constant rapid motion of the head from side to side, which never ceases while he is awake, but the head is reported by the attendants to be still when the patient is asleep; the movements amount to 120 in a minute and are very distressing to witness. The patient is weak, and although his lower limbs are not paralysed, they are evidently weak, and when he walks he uses a stick. His appetite is good, and he sleeps soundly at night. He has on an average about three or four epileptic paroxysms in twenty-four hours. An attempt was made on the 15th to put him under chloroform, but the instant the lint was brought near his mouth, ere in fact he had inhaled it for above a few seconds he went off into a severe epileptic paroxysm, which lasted for upwards of ten minutes.

The Medical Officer in charge prescribed morphia, which quickly disagreed with him; he complained of headache and nausea, with marked increase of the head movements, and it was at once discontinued. Sulphate of quina to the extent of gr. x, with 20 m. of cannabis indica was given twice a day by enema.

On the 21st of June his urine was examined by volumetric analysis. Weight of patient without clothes, 108·5 lbs; quantity of urine passed in 24 hours, 20·253 ozs.; spec. grav., 1027; acidity, 14·120 grains of oxalic acid; quantity of urea, 462·24 grains, or 4·26 grains per each pound weight of the patient, 3·53 being the normal quantity.

Temperature indicated by bulb of thermometer placed in left axilla was 90° F. He was thrown into a violent fit when the thermometer was placed in the axilla. The patient had a liberal diet and was allowed three glasses of wine a-day.

On the 21st he began the use of extract of belladonna; up to the 2nd of July there was little change, either in the number or duration of the fits, on that day during sleep his head was partially shaved, which annoyed him very much, he flew into a violent rage with the orderly, and while he was abusing him fell into an epileptic paroxysm; from that day there was a manifest improvement, although for some days he was sullen and angry, the movements of the head diminished in frequency and violence, and for hours his head would be almost still. It is reported on the 4th that the movements had quite disappeared.

The belladonna, which was occasionally intermitted, was continued.

On the 5th it was noted that the man's general health and appearance had greatly improved, his spirits rallied, and he became quite cheerful, and the epileptic attacks were reduced to one in 24 hours. On the 8th the belladonna was discontinued for two days and again resumed. From this date the improvement was well marked, he became cheerful and very happy, going 60 hours sometimes without any paroxysms, and he enjoyed long intervals of rest from the head movements, which were only excited to any distressing extent when he was annoyed. But he became so anxious to return home, and pressed so strongly to be allowed to do so, that it was impossible to resist his importunity now that he had been found "unfit" and invalided; accordingly he was sent to his home under proper escort on the 11th July.

REMARKS.

This is, I suspect, an extremely rare case; I have diligently searched, without success, in all the works within my reach for one exactly like it. Dr. Parkes tells me that he saw one in University College Hospital, where the movement was to one side only, the case was acute, ran a rapidly fatal course, and the lesion was in the crus cerebri. I find references by authors to cases where the movement was either to the right or left side. But there is not much agreement as to the seat of injury; Brown Sequard obtained rolling movements of the head to the right side by injuring the neighbourhood of the insertion of the lower roots of the par vagum, in guinea pigs, and also of the insertion of the auditory and of the facial nerve; while Magendie obtained the same result by injury of the posterior part of the processus cerebelli ad pontem, and Flourons of the tubercula quadrigemina. What the nature of the lesion may be here, I do not take upon me to say. It is remarkable, however, that as in Brown Sequard's guinea pigs, so here, the lightest touch on the scalp of this patient so violently increased the motion of his head, that humanity forbade a prolonged examination.

I authorised a trial of morphia in this case with a view, if possible, to obtain such a degree of quietude of the head as would admit of a more careful examination; the result so far as it went, goes to confirm Brown Sequard's view that opium not only produces congestion of the brain, but increases the reflex power of the cord. I have had the misfortune to see in India six cases of hydrophobia, and in such of them as were treated with opium the disease from, as I suppose, this cause, was aggravated in a marked manner. Belladonna is the most powerful agent for diminishing reflex action, and its use in this case was to a certain extent satisfactory, from the hour the patient was fairly brought under its influence some amendment took place, and he certainly left the hospital considerably improved, the fits diminished in strength and frequency, and he often passed hours without any abnormal movements of the head at all, and even when they were excited by temporary irritation they were not nearly so violent, nor did they last long. I would gladly have kept this poor man for further treatment, but his desire to get home to his friends amounted to a passion, and I had no authority to keep him against his will after he had been found "unfit," even had such a thing been allowable from other considerations. I have never heard of him since, although I requested him to get some person to let me know his condition after he had been some weeks at home.

The question of applying a trephine over the seat of injury was under discussion but I set my face against any such measure. The statistics of this operation are not encouraging, particularly when undertaken for the relief of symptoms analogous to that of Brassington. Without the aid of chloroform, any operation was impossible, and as we have seen, any attempt to administer it induced an epileptic paroxysm of an alarming character; the removal of the swelling might have been attended with some benefit by diminishing the morbid sensibility of the scalp, but as already remarked without chloroform any operation was simply impossible.

DISEASES OF THE DIGESTIVE SYSTEM.

Splenitis (Leukæmia).

Regiment.	Rank.	Name.	Age.	Disease.	Date of last Admission.	Date of Death.
81st	Drummer	John Newman	17	Splenitis	Sept. 27, 1861	Nov. 19, 1861

Drummer J. Newman, aged 17 years, but whose general appearance would lead one to think him not more than 14 or 15 years of age, admitted into the Medical Division of Fort Pitt Hospital on the 17th September, 1861.

Went out to India in June, 1858. Two months after his arrival there, was attacked with dysentery, afterwards suffered from fever, and in January 1859 was admitted into hospital at Peshawur with enlarged spleen; for this he was invalided home to England, where he arrived in September 1859, and was then sent to Yarmouth for a year for change of air.

On admission at Fort Pitt the following state is noticed—great emaciation, very anæmic, lips and gums very pale, conjunctivæ, and skin of a yellowish hue. He has altogether a dirty white appearance, unlike that seen in any other disease, chest is small and contracted. The abdomen is distended by a large solid mass extending from the left hypochondriac region *downwards* nearly to the crest of the ilium and *across* overlapping the liver, the latter region being also enlarged, as shown by the increased dulness on percussion. There is no sign of any fluid in abdominal cavity. The circumference round abdomen is 37 inches, round the pelvis 33 inches, and chest only 30 inches, a small quantity of blood on being drawn from the finger and examined microscopically, was found to be very watery and attenuated, the number of white corpuscles more that equalling those of the red, and are of various forms and sizes. The blood was also examined for pigment cells, but none were seen sufficiently clearly to indicate their definite existence. His digestive functions are apparently well performed, appetite good, bowels regular. He was put on nourishing diet with wine, and treated with quinine and sesquichloride of iron.

November 4th.—He has been getting gradually weaker, and is still more anæmic in appearance ; the lower extremities are getting œdematous.

The blood was again examined, and the white corpuscles seem to have increased still more in their ratio to the red ones, and the blood is still more attenuated. He has had some very severe lumbar pain during the last two days ; this was of a very acute character, but has been relieved by cataplasms and fomentations.

November 14th.—The anasarca is becoming general. The countenance has an anxious appearance. There is also great dyspnœa and increased dulness over the heart from effusion into pericardium. The dyspnœa and anasarca gradually increased, and he died on the morning of the 19th November. The annexed observations were made daily as regards the urinary excretions by Staff Assistant-Surgeon Webb.

OBSERVATIONS of Urinary Secretions taken in the case of Drummer J. Newman, 81st Regiment.

Date.	Weight.	Pulse.	No. of Respirations per Minute.	Temperature in Axilla.	Diet in 24 hours		Urinary Excretions.							Remarks.
					Weight of water-free Food	Water.	Quantity in 24 hours.	Sp. gr.	Uric Acid.	Urea.	Chlor. of Soda.	Phosc. Acid.	Acidity.	
	lbs.				oz.	oz.	oz.		grs.	grs.	grs.	grs.	grs.	
Oct. 25	99½	112	23	98	15	150½	26	1,015	16	309	..	..	16	Slightly
,, 26	99¾	108	20	98	15	77	48	1,020	17·5	420	128	..	16	
,, 27	99¾	96	20	98	15	76½	42½	1,011	18·	295	123	..	27	
,, 28	99½	96	19	97	14	77	39½	1,017	13·5	277	..	..	..	Pale colour.
,, 29	99¾	98	20	100	14	79	40	1,011	13·8	295	158	..	27	
,, 30	103½	96	18	97	15	75½	40	1,011	13·8	164	87	..	81	
,, 31	101	97	19	99	15	76	39	1,011	15·3	327	66	28·17	37	
Nov. 1	104½	98	21	98	15	76	35	1,011	19·	154	61	18·6	53	No albumen.
,, 2	106½	100	22	98	12	81½	32	1,017	13·	450	77	15·5	56	,,
,, 3	108	95	19	99	15	76	35	1,016	13·	..	103	17·8	90	,,
,, 4	110	98	23	98	15	69½	26	1,017	13·5	246	44	11·0	22	1 oz. evaporated gave 12 grains solid matter.
,, 5	112	126	27	97	15	71	22½	1,012	13·25	279	60½	21·3	..	
,, 6	112	122	26	98	15	74	28	1,016	12·27	269	..	5·64	36	
,, 7	110	125	30	97	15	73	22½	1,016	11·	255	52½	3·7	35	
,, 8	117½	122	35	99	15	72	28	1,017	21·4	249	62½	9·0	6	No albumen.
,, 9	118	130	39	98	14	68	30	1,015	16·4	290	47	12·0	25	,,
,, 10	..	125	40	97	15	75	29	1,016	8·7	267	24	32·86	28·8	,,
,, 11	..	120	26	96	15	76	38½	1,016	17·48	352	45	36·57	27·2	,,
,, 12	..	121	29	96	15	75	50½	1,014	32·	522	64	25·3	24·4	,,
,, 13	..	119	30	95	15	75½	42	1,012	14·	441	67	9·0	11·	,,
,, 14	122½	120	32	96	15	103	32½	1,014	14·	304	62	..	..	
,, 15	122	136	30	95	uncertain	120	18½	1,012	12·	138	..	..	..	
,, 16	118	129	31	95	,,	115	Quantity passed undetermined during these days.							
,, 17	120	128	29	95	,,	110								
,, 18	121½	125	30	95	,,	120								

POST-MORTEM EXAMINATION TWENTY-FOUR HOURS AFTER DEATH.

Chest.—Lungs congested posteriorly, otherwise healthy. Pericardium distended, containing 8 oz. of clear pale serum of a spec. grav. of 1012, showing a trace of sugar, and containing a large amount of urea. Heart in all respects healthy, right auricle distended with blood, which has a characteristic whitish brown appearance, here and there, where it is in a semi-coagulated state, it has a dark coffee-ground appearance, coagula are very soft, microscopically examined it is found to consist almost entirely of white corpuscles, some of which are very large and irregular.

Abdominal Cavity.—This contains only an ounce or two of serum, which on examination shows the presence of sugar. The greater part of the abdominal cavity is occupied by the spleen, which descends as far as the pelvis, and comes forward riding over the middle of right lobe of liver. It is adherent anteriorly to wall of abdomen, and also to the left lobe of liver. Its weight is 175 ounces. Dimensions of spleen.—Anter post, 14·7-inch; thickness behind, 4·9 inches; in front, 3·6 inches. Structure.—Substance very firm and fleshy, composed of connective tissue in a great degree of development, no malpighean saculæ visible. Pulp will not wash out, it reddens on exposure to air. No amyloid re-action by iodine test.

Microscopical appearance.—An exaggerated form of spleen structure, containing a large number of very large white corpuscles of irregular form. Intestines wasted and atrophied, Peyer's glands worn away, their site marked by greater thickness, some slight ulceration of colon with enlargement of solitary glands.

Liver.—Enlarged weight 154 oz. congested; white substance between asini. No re-action with iodine; supra renal capsules, right one adherent to liver, contains cheesey purulent-looking matter.

Kidneys.—Left concave on anterior aspect, and granular on surface, with loss of substance. Right kidney is softer in substance than left; surface smooth; no loss of substance.

Chorea.

Regiment.	Rank.	Name.	Age.	Disease.	Date of last Admission.	Date of Discharge.
66th	Private.	George Stratford	41	Chorea	May 29, 1861	

Medical History.—Served at Gibraltar five years; Canada, three years; West Indies, three years; East Indies, six years, and the remainder at home.

This man's disability originated while serving in the East Indies about the beginning of 1858; it has progressed gradually since that period, is now confirmed, and renders him unfit for the performance of any military duty. The disease is attributable to long service in various climates, and has not been aggravated by intemperance or vice. Has never received any gun-shot wound or other injury; has no other disease; was a labourer prior to enlistment, always enjoying remarkably good health; parents both dead, cause unknown. never had venereal.

In the West Indies he suffered from ague for some time, but recovered under the use of quinæ.

At Mangalore, twelve months ago, while on the line of march he was struck down by a *coup de soleil.*

He remained insensible for forty-eight hours. Cold effusions were used; from that date to the present time he has suffered from chorea. The disease remaining stationary, and no benefit being derived from treatment; at present he is tolerably stout-looking, although he says he has lost flesh considerably. He suffers constantly from nervous twitching, and loss of control over the voluntary muscles; there is something very peculiar in his appearance, the nervous affection giving to the expression of his face an air of peculiar conceit, (although in reality the man is very modest and rational) almost resembling that of a lunatic under the delusion that he is a king. The movements are less when the man is left alone and not much noticed, but the moment he is spoken to they are quickened, those of the fore arm and fingers in particular, going through movements as if he was performing on a musical instrument, the movements are without doubt quite beyond his control.

This patient continued in the above state all the time he was in hospital, and was finally discharged the service. An attempt was made to depurate the blood by a course of alkalies, and subsequently of iodide of potassium, followed by a course of tonics calculated to restore tone to the nervous system.

Embolic Abcesses of Lungs. Valvular Disease of Heart, Amyloid Liver and Spleen.

Regiment.	Rank.	Name.	Age.	Disease.	Date of last Admission.	Date of Death.
52nd	Private	Thomas Rooney	30	Phthisis pul.	May 22, 1861	Nov. 8, 1861

Medical History.—" Nearly five years in India, where he had been three times in hospital with jaundice, and on his last admission, in India, there were evident signs of functional disease of the heart, the sounds of the heart were not much changed, but extended in all directions beyond the natural limits, and indicated hypertrophy of the organ. General health good."

" Admitted to Fort Pitt on the 27th July, 1857, from India, with a mitral bruit which can be distinctly heard and traced, as far as the right sterno-clavicular auticulation; the carotids pulsate with great force; suffers from shortness of breath in wet weather; cannot sleep on right side; conjunctivæ yellow, and have been so ever since he had jaundice. No pain or tenderness in the region of liver. Discharged to duty in good health on the 11th August, but sometimes suffers from dyspnœa."

November 5th, 1858, he was again admitted to hospital (garrison) for chronic bronchitis. He is weak and suffers from severe cough, with copious expectoration, but was again discharged to duty on the 12th November; after this he was for a short time under the care of Staff-Surgeon Home, who found him suffering from enlarged liver. Valvular disease of the heart with hypertrophy of its left side (re-admitted to Garrison Hospital on the 20th September. 1860). He has now suffered from pulmonary disease for five years, said to be bronchitic, and affecting chiefly right lung. Dyspnœa with loud mucus râles, and copious offensive expectoration, associated with fever. Twenty-two days after admission the dyspnæa is still urgent, pulse 86 and full. A bruit is noted in the left side of the heart. Up to the 10th November he continued in the same state, always expectorating offensive matter, which was bloody, and continued so for ten days.

The 9th December still finds him in hospital, and on the 26th January, 1861, it is reported "that there is no improvement in his condition." The expectoration continued "copious and offensive throughout February and March," and it is frequently noted that he had "pains in chest." April 1st 1861, the disease is said to be "phthisis." May 11th, the symptoms remain the same, and on the 22nd he was sent to Fort Pitt as an invalid for discharge.

On admission he was observed to suffer from constant cough, and to expectorate large quantities of frothy mucus, not at present bloody; no pain in chest, which does not expand fully in respiration; dulness in the infra-clavicular region, more marked on the right than on the left side, with bronchial respiration over both apices; pulse 80, of good strength. Ends of phalanges enlarged, also long bones of lower extremities; suffers from piles. 23rd May, expectorates large quantities of frothy mucus which is purulent and bloody towards the bottom of the vessel; 29th, continues to expectorate large quantities of muco-purulent matter. May 31st, pain in cardiac region. June 1st, pain in cardiac region gone, sputa bloody. June 4th, blood in sputa gone; thirst is excessive, and he vomits after taking food. June 11th, pain in the wrist, formerly fractured. 17th, pain in right arm. June 27th, pain in epigastric and right hypochondriac regions, dulness there on percussion, edge of liver can be felt about two inches below costal cartilages, and extending into left hypochondriac region; it is very painful on pressure. July 12th, sputa streaked and stained with blood, complains of a "smarting pain" over lower portion of the left lung. 16th, feet and ankles very much swollen, giving him much pain. 22nd, a small clot of blood coughed up yesterday. 27th, feet cold and feels great difficulty in maintaining warmth. 31st, rheumatic blush over joints, with rise of pulse and febrile symptoms. August 11th, swelling has nearly left both feet, maintains his general health in a remarkable manner. 17th, expectoration excessive and cough harrassing, with occasional streaks of blood in sputa, sweats much at night, appetite good. Sputa, yesterday, contained a great deal of blood, feels easier since the blood passed, but gets gradually weaker. 24th, a small quantity of blood passed to-day. 29th, no blood during last two days, pain and swelling in the knees. October 26th, repeated attacks of dyspnœa with irregularity of heart's action, pain in loins, severe cough, sputa tinged with blood. November 2nd, small abscess behind his left ear, opened to-day. 4th, pain over the liver very severe, but last night he felt as if something suddenly gave way or burst, and immediately a quantity of blood, mucus, and pus, came up, to the extent of two pints during the night. 6th, expectoration diminished, but fœtid in smell. November 8th, died at 3·30.

Post-Mortem Examination.

Pleura.—Strong adhesions on both sides, and especially to the diaphragm of the right side.

Lungs.—Do not collapse, coagula filling the minute blood vessels in many parts, especially in the vicinity of isolated and irregular white deposits (fibrinous); some of these deposits have a red line of demarcation forming round them, within which the substance is commencing to soften; small sloughy cavities exist in great numbers towards the base of each lung. General softening of the tissue, especially throughout the posterior aspect. Right lung more intensely congested than the left, studded here and there with small sloughing abscesses; the upper lobe contains numerous irregular nodules of a light grey aspect (fibrinous). In the left lung the small abscesses contain more pus-like contents than the others.

Pericardium.—White spots in outer aspect of anterior surface of the heart, with corresponding whiteness on serous aspect of free membrane.

Dimensions.

Heart.—Base to apex 5·7; aur. ven. groove to apex, 4·3; transversely at aur. ven. groove 4.

Circumference of Orifices.

Right aur. ventric. ·12; pul. artery, ·10; left aur.-ventric. ·12; autic aperture, ·10.

Valves.—Nodular cartilage-like thickenings on the aortic valves, and on the lappets of the mitral, and especially on that next seplum, remains of fibrinous deposits on these, a coagulum extends into its finer divisions.

Muscular Substance.—Left substance considerably enlarged. Col. carnæa hypertrophied to the shape of nodular pyramids or masses. Thickness of ven. wall ·9.

Remarks.

Although Rooney was a long time in the hospital at Fort Pitt, all that is essential in his case is soon told. On admission his emaciated and hectic condition, the enormous muco-purulent expectoration and cavernous respiration, heard particularly in the upper lobe of the left lung, with patches of dulness at other points, made the diagnosis of phthisis, in the judgment of all who saw him, not doubtful; and, as if to make the prognosis more gloomy, the symptoms of valvular disease of the heart, with hypertrophy and great enlargement of the liver, were present to make it so.

Rooney had not been long in hospital before he began to experience intermitting attacks of bloody expectoration, almost always attended with more or less pain, and flushing of the face, with increased frequency of pulse; some of these attacks passed into hæmoptysis, they occurred again and again, and when they passed away the expectoration would resume its muco-purulent condition, sometimes abundant, sometimes less so, but on the whole so excessive in quantity as often to excite my surprise that his constitution could bear up against it, even with all the aid he had from a generous diet and an abundant supply of stimulants.

At one time anasarca of the lower limbs was present, and threatened to become general, but passed away; in this state he continued until the 7th of November, when he experienced a sharp attack of pain in the right hypochondrium; when this had lasted about 30 hours, he felt, as he expressed it, something give way in his right side, his mouth filled with bloody purulent fluid, and in the course of that night he expectorated about a quart of it. This discharge to the eye was identical with that so familiar to those who have seen hepatic abscesses discharging by the lungs, with this difference, which was noticed by me at the time, it contained more air bubbles than we commonly see in such cases. I confess that now I did not doubt that here we had a case of unmistakable hepatic abscess communicating with the lung, an opinion on which Dr. Morehead, who happened to see the case with me, concurred. It is propable that the heart disease was first in order of time, the hepatic disease probably followed during his four years service in India; the remaining phenomena, with the light of the post mortem examination, are not difficult of explanation. The dulness on percussion at various points was due to the grey fibrinous deposit, the cavernous respiration to the excavations when these underwent further degeneration, suppurated and discharged. To what were the intercurrent attacks of pneumonia due? doubtless to embolia, furnished by the diseased valves, and from thence carried not only to the lungs, but to the spleen and kidneys, as my colleague, Professor Aitken, demonstrated by microscopic examinations.

It is possible, nay, it is probable, that when the valvular bruit was absent some of the cartilaginous bodies had become disturbed, leaving the valves for a time more smooth.

The pain experienced by the patient in the right hypochondrium before the profuse discharge, is explained by the pleuritic inflammation at the base of the lung, resulting in the diaphragmatic adhesions; it is not so plain what the source of the great and sudden discharge was, for although there was immense congestion and asthenic pneumonia of the base of the right lung, there was no large cavity in that situation.

Among the many instructive points in this case not the least is the caution it teaches us to diagnosis of hepatic abscess. Morehead, writing in the Bombay Medical and Physical Transactions, so far back as 1845, has the following observations relative to hepatic abscess opening into the lung: "This expectoration of brick-red puriform fluid I am disposed to consider as pathognomonic of abscess in the liver, opening into the lungs, because there is not any disease of the lungs in which we can conceive, as a result, the co-existence of pus intimately intermixed with blood, the one, pus, being the result of an advanced stage of inflammatory action, the other, blood, the result of an early stage of the same action; but when we suppose that the pus came from the liver, and the blood from the lung, irritated by the foreign body, the co-existence is sufficiently intelligible."

Dr. Budd, in his "Treatise on Diseases of the Liver," published in June, 1848, writing of the opening of hepatic abscess into the lung, thus expresses himself: "When this happens, it is marked by very characteristic symptoms, by a new train of stethoscopic phenomena which it is perhaps unnecessary to detail, and by the sudden expectoration of a dirty red or brownish puriform matter. The peculiar colour of this matter, which has been already noticed, arises from the pus, in its passage through the lung, becoming mixed with blood and broken down pulmonary tissue. There is no matter like it expectorated in any disease of the lung itself, and I believe that its appearing is pathognomonic of abscess of the liver, or, at least, of abscess perforating the lung. I observed it in several instances in the *Dreadnought*, and more than once was led by it to detect an abscess in the liver, of which I had previously no suspicion."

"Here then," continues Dr. Morehead, "are two observers, remote from each other, unacquainted with each other's researches, making at the same time, and very nearly in the same words, the same observation relative to a symptom of disease; yet both were certainly in error in regard to the exclusive light in which they viewed the symptoms.

"The kind of sputa which I have described in my remarks on pneumonia, under the designation of red-tinged muco-puriform sputa, observed in states of asthenic pneumonia, is not to be distinguished from that which I formerly considered to be pathognomonic of hepatic abscess having opened into the lung; confiding in my former investigations, I, in more instances than one committed an error in diagnosis, after my transference from the European to the Jamsetjee Jejeebhoy Hospital brought me for the first time into practical acquaintance with asthenic forms of pneumonia."

The diagnosis between asthenic pneumonia and communicating hepatic abscess, when undue importance is not attached to this character of the sputum, may, no doubt, in the majority of cases, be satisfactorily made out; but yet not in all.

Empyema simulating Hepatic Abscess effused into Right Pleural Cavity.

Regiment.	Rank.	Name.	Age.	Disease.	Date of last Admission.	Date of Death.
6th Dragoon Guards.	Private	Jesse Fass	30	Hepat: chron:	Aug. 14, 1861	Dec. 15, 1861

Abstract says that he was four months in hospital for fracture of scapula; had a severe attack of ague, which came on whilst he was in hospital suffering from a suppurating wound of knee. This reduced him much, but he soon after recovered his health completely. Was again in hospital from his horse falling into a trench, and remained under treatment about four months. From this time remained quite well and at his duty until August, 1860.

"In August, 1860, had a slight attack of dysentery for about 5 days, he otherwise being in good health."

"As it did not give way to a dose or two of medicine, he went into hospital. Two days after admission (for dysentery) was suddenly attacked with acute pain in the region of the liver. Three days after occurrence of pain, an abscess burst, and he spat a large quantity of bloody pus. He left India in March, 1861, still spitting occasionally large quantities of pus."

On admission into Fort Pitt, on the 14th August, 1861, complained of frequent hacking cough, pain in right hypochondrium, with profuse expectoration of mixed pus and blood. Is much emaciated; chest narrow, expansion bad on the right side; at the apex of chest on right side, dulness on percussion, with tubular respiration; great dulness below the nipple, with absence of respiratory sounds. Left lung, supplementary respiration; heart's action rapid. No change was observable for months; suffered a good deal from dyspnœa; sometimes no purulent matter was expectorated for days; sometimes, after severe attacks of dyspnœa, the discharge would burst out again with increased violence.

November 16th—No respiratory murmur on right side; there seemed to be effusion on that side. Abscess ceased discharging; great dyspnœa. On consultation it was deemed not fit to pass a trochar to let out the pus.

Towards the end of November expectoration recommenced, and he sank gradually, getting extremely weak. The day previous to death there were severe abdominal symptoms, as if the abscess had burst into the cavity.

Died 12 A.M. 15th December.

POST-MORTEM EXAMINATION.

Lungs.—Weight of both lungs, 5 lbs. $15\frac{1}{2}$ oz.; right lung compressed against the posterior aspect of chest, and the cavity filled with flocculent pus.

Heart.—White spots on the anterior surface of heart. From the right side of heart, 80 oz. of purulent pus was removed. In right auricular cavity decolourised coagula. Weight of heart, $11\frac{1}{2}$ oz.; base to apex, 4·8 inches; aur. ven. groove to apex, 3·8 in.; transversely at aur. ven. groove, 3·5; right aur. ventric orifice, No. 12; left auric ventric orifice, No. 9; valves healthy; pulmonary artery admits ball No. 9; aorta admits ball No. 8; black pigmentary patches in the small intestines; Peyer's glands generally atrophied.

Liver.—Right lobe of liver reached as far down as the ilium; weight, 5 lb. 15 oz.; loss of substance in the surface of the right lobe of liver in contact with what remains of diaphragm, which is absorbed to a thin film only, which separates the cavity of pleura from the liver. But no abscess exists in the liver. The substance of the liver is softened in the vicinity of the site of absorption.

Spleen.—Weight, 12 oz.

Kidneys.—Weight of left, 8½ oz.; weight of right, 8¼ oz.

REMARKS.

This is another example of the difficulty sometimes experienced in diagnosing with precision cases simulating hepatic abscess. The whole history of this case pointed to hepatic abscess.

The patient was under treatment, in India, for dysentery; in the course of it he was suddenly seized with acute pain in the right hypochondrium, followed in a few days by the discharge of blood-tinged purulent matter from the lungs. On admission, there was pain in the hypochondrium, with evident enlargement of the liver, with all the signs of a collection of pus in the pleura, with free, red-tinged muco-puriform expectoration. I did not doubt that here we had one or more abscesses of the liver, communicating with the pleura, and discharging through the lung; but the *post-mortem* examination revealed that, strictly speaking, there was no abscess of the liver, for although there was loss of substance of the right lobe of that organ, where it was in contact with what remained of the diaphragm, it is probable that this was the result of ulcerative absorption from the pressure of the collection of purulent matter in the pleura. The observations made at the end of Rooney's case in this Report, are applicable here.

Were such a case as this to present itself again, I should not hesitate to attempt its relief by operating, withdrawing the pus from the cavity by means of Bowditch's syringe.

SUMMARY

Of the Numbers, Classes, and Results of the Gunshot and Sabre Wounds, inflicted during the Mutiny which took place in India, between May 1857 and the early part of 1859, as well as of the Capital Operations consequent on Wounds in the same Campaign, on account of which Soldiers have been sent from their Regiments as Invalids,* up to the 31st of December, 1862.

Compiled by Deputy Inspector-General LONGMORE, in charge of the Surgical Division of the Royal Victoria Hospital, Netley, and Professor of Military Surgery in the Army Medical School.

IN the year 1860, Staff Surgeon Dr. G. Williamson published a classified eturn of all the wounded from the Indian Mutiny who had landed at Gravesend up to June 30th, 1859. As, in addition to Dr. Williamson's observations on those cases which fell under his notice at Fort Pitt, every case in this return, whether in hospital or not, was separately and carefully examined by Inspector General Taylor, C. B., then Principal Medical Officer at Chatham, whose duty it was, among others, to determine the nature of the case of each invalid, as well as his fitness or unfitness, as the case might be, for further service; there can be no doubt that the classification was as accurate as any that could be arrived at by observations of patients who had not been seen by the observers in the primary and secondary hospitals in which they had been previously treated. The return referred to may, therefore, be accepted as a fair illustration of the nature, and proportionate numbers, of the injuries likely to be found among the surviving wounded of a campaign in which warfare of a varied kind is carried on, chiefly consisting, however, of siege operations and assaults.

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* It is necessary to explain to those who are not accustomed to the use of military terms, that the expression "Invalid" has not the limited meaning in military phraseology which it has in the ordinary language of civil life. Whereas in the latter an invalid is a person who is in an infirm state of health, in the former the term is applied to any one who is found to be inefficient as a soldier, and who is proposed to be discharged from the service in consequence. The inefficiency may arise from original physical or mental defects, from the consequences of wounds or surgical operations, as well as from disability caused by ill-health. The expression "Invaliding" refers to the process to which an alleged inefficient soldier is subjected with a view to his being discharged from the Army.

Since the date at which Dr. Williamson's notes terminated, other invalids, disabled by wounds received in the same mutiny, have arrived at Fort Pitt; and, moreover, some of those who were discharged to modified duty have been since found incompetent even for this amount of work, and have returned to Fort Pitt to be discharged altogether from further service. The results of the campaign may therefore now be further illustrated. Unfortunately the wounded from the brief campaign which had just been finished in Persia, before the outbreak of the mutiny in India took place, were included in Dr. Williamson's returns; but as the number of the Queen's troops engaged in the Persian operations was small, the invalids from among them are not sufficiently numerous to interfere with the general classification of the invalids who met with their injuries from the mutiny in India.

I propose briefly to record in this summary, firstly, the total number of wounded from the Indian mutiny campaign who have been admitted at Fort Pitt each year since June 1859, the date at which Dr. Williamson's returns closed, both those primarily admitted, and others re-admitted after having been previously discharged to duty or otherwise, together with the final results of their injuries; and secondly, to append a classified return, exhibiting the nature of the wounds of all the *individual* soldiers invalided (excluding all re-admissions) from the beginning of the campaign up to the end of the year 1862, arranged according to Inspector-General Taylor's classification, which is the form ordered in the present Army Medical Regulations.

Staff-Surgeon Williamson's returns showed that up to June the 30th, 1859, the total number of wounded that had landed at Gravesend was 744. Of these 232 were discharged to duty, 89 to modified duty, 308 were pensioned out of the Army, and 7 died. The results of the remaining 108 cases were not recorded by Dr. Williamson. These 108 cases will be referred to hereafter.

Between the 1st of July and the 31st of December, 1859, which is the remaining portion of the year not included in Dr. Williamson's returns for 1859, 89 wounded invalids were admitted, but of this number 16 were re-admissions from men who had been sent to modified duty. Of these 89, 2 were sent to modified duty, 17 to duty, 3 to the Convalescent Hospital at Yarmouth, and 67 were discharged from the Army as unfit for all service, and pensioned.

During the year 1860, 87 wounded invalids were admitted; of this number, 25 were men who had been discharged previously to modified duty, and 5, to the convalescent hospital at Yarmouth. Of these 87 none were sent to modified duty, 6 were sent to duty, 4 to the Convalescent Hospital at Yarmouth, and 77 were discharged as pensioners from the Army.

During the year 1861, 29 wounded invalids from the Indian mutiny were admitted; and of this number 14 were readmissions from among men who had been sent to modified duty, or to the convalescent hospital. Of these 29, 1 was discharged to duty, and 28 were discharged from further service in the Army.

During the year 1862, 11 wounded from the Indian mutiny were admitted; all these 11 were discharged from further service in the Army.

It will be seen from the previous remarks that the number of admissions of invalids from the Indian mutiny has gradually diminished down to 11 per annum in 1862. It can now scarcely be expected that any more men whose disabilities are attributable to wounds received during this campaign will have to be discharged from the service; although, among invalids disabled by other causes, there will doubtless be still occasionally soldiers who received injuries of a slight kind in that campaign, which have not been included in the numbers mentioned above.*

Staff Assistant-Surgeon Dr. Schrœder has with much labour gone through the various records for the purpose of ascertaining the final destination of the 108 invalids, the results of whose cases were not recorded in the returns classified by Dr. Williamson. As the records of these patients were scattered through the books of the Brompton, Fort Pitt, and Yarmouth hospitals, and as some, from not having been under hospital treatment, were only to be found in the records of the Invalid Depôt, there has been considerable difficulty in accomplishing this task. The destination of the patients referred to has, however, been ascertained, as verified by myself, in all but 18 instances, and is shown in the following Table :—

Remaining undisposed of in Dr. Williamson's Returns.	Discharged to Duty.	Discharged to Modified Duty.	Discharged to Convalescent Hospital at Yarmouth.	Invalided.	Died.	Result not ascertainable.
108	10	3	12	64	1	18

The summary of Dr. Williamson's returns will, therefore, in consequence of 90 of the 108 unrecorded cases having been traced to their results, be modified as shown in the following return :—

Total landed at Gravesend, up to June 30, 1859.	Discharged to Duty.	Discharged to Modified Duty.	Discharged to Convalescent Hospital at Yarmouth.	Invalided and Pensioned.	Died.	Result not recorded.
744	242	92	12	372	8	18

The numbers and disposal of the invalids for wounds received in the Indian mutiny who have arrived at Fort Pitt each year *since* June 30th, 1859, up to December 1862, including both fresh cases as well as re-admissions of some of the 92 men previously discharged to modified duty, or from among the 12 convalescents sent for change of air to Yarmouth, shown in the above return, have been already stated in a former part of these remarks. The total numbers of admissions, and, out of them, the numbers of *fresh* cases are concisely shown in the following Table :—

Invalids wounded in India who arrived at Fort Pitt.	Between July 1, and Dec. 31, 1859.	In 1860.	In 1861.	In 1862.	Total.
Total number of Cases Admitted ..	89	87	29	11	216
Of these were Re-admissions ..	16	30	14	..	60
Number of Fresh Cases	73	57	15	11	156

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* The opportunity is now afforded of showing the number of men admitted into the Invalid Hospital, in the year 1863, on account of the consequences of wounds received during the Indian Mutiny. The number has been only 2. In one instance the wound belonged to Class 9, Order 4, the left tibia having been perforated by a musket-ball at the storming of Delhi; in the other, the wound belonged to Class 4 Order 2, the chest having been struck by a fragment of shell at Delhi, and some ribs injured. In the first of these cases the wound was cicatrised, but weakness and swelling, on exertion of the limb, was complained of; in the second, sinuous abscesses, connected with repeated exfoliations of necrosed rib, were the sources of disability.—T. L.

The results of these 156 fresh cases, all re-admissions being deducted, are shown in the following Table :—

Total Number of Wounded Invalids who landed at Gravesend from India, between June 30, 1859, and Dec. 31, 1862.	Discharged to Duty.	Discharged to Modified Duty.	Discharged to Yarmouth.	Invalided and Pensioned.	Died.	Result not recorded.
156	24	2	7	123	..	..

These numbers being added to the summary of Dr. Williamson's return give the following results :—

Total Number of Wounded Invalids who landed at Gravesend from India, between April 1858,* and Dec. 31, 1862.	Discharged to Duty.	Discharged to Modified Duty.	Discharged to Yarmouth	Invalided and Pensioned.	Died.	Result not recorded.
900	266	94	19	495	8	18

The wounded among men of the Royal Artillery from India did not come to Fort Pitt, but landed and were disposed of at Woolwich. Staff Surgeon H. F. Smith, the Registrar of the General Hospital, Woolwich, has furnished me with the following return :—

SUMMARY of Wounded Invalids of ihe Royal Artillery who have returned from the Indian Mutiny.

Total landed at Woolwich up to Dec. 31, 1862.	Discharged to Duty.	Discharged to Modified Duty.	Invalided.	Died.	Result not recorded.
35	3	..	23	..	9

When the numbers of men of the Royal Artillery who landed at Woolwich are added to those of the Cavalry and Infantry who landed at Gravesend, we have exhibited to us the total number of wounded survivors among the Queen's troops engaged in the Indian mutiny campaign, the consequences of whose wounds were of such a degree of gravity as to lead to their being sent from their regiments to the Invaliding Hospitals on account of them. The Tables given show the *primary* disposal of these 935 invalids. As shown elsewhere, viz., in the remarks on the admissions during the period which has elapsed between June 1859 and December 1862, some of those who appear in these Tables as having been primarily sent for change of air to Yarmouth, or discharged to modified duty, were subsequently re-admitted at Fort Pitt, and disposed of according to the indications gained from more extended experience of the nature of their cases ; and it is probable that the greater number of those who appear in the columns of discharged to "modified duty," or to "convalescent hospitals," during the period of Dr. Williamson's return, were ultimately discharged from the Army as pensioners. No invalid was discharged to modified duty after the year 1859, as almost invariably men who had been so disposed of were subsequently sent back to Fort Pitt, with statements that on trial they had been found unfit for all military service.

The nature and objects of the classified return which follows have already been explained.

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* This was the date on which the wounded Invalids from the Indian mutiny commenced to arrive at the invalid Depôt.

CLASSIFIED RETURN, showing the Nature of the Wounds, as well as of the Capital Operations consequent on Wounds, received during the Indian Mutiny by Invalids who landed in England between April 1858, and December 31, 1862; together with the Primary Results of these Injuries, so far as regards the Disposal of the Wounded Men by the Invaliding Boards.

Classification and Specification of Wounds and Injuries.	Total No. of Wounded Invalids who landed in England from India between April 1858, and Dec. 31, 1862.	Discharged to Duty.	Discharged to Modified Duty.	Discharged to Convalescent Hospital at Yarmouth.	Discharged from further Service, and Pensioned.	Died.	Result not recorded.
I. *Gunshot Wounds of the Head.*							
1. Contusions and simple flesh Wounds of the Scalp ..	3	3	..	..	..	..	..
2. With contusion or fracture of the Cranium, without depression	12	7	..	..	5	..	..
3. Ditto with depression, or displacement of both Tables ..	10	2	1	..	5	1	1
4. Penetrating the Cranium	1	..	..	..	1	..	..
Total	26	12	1	..	11	1	1
II. *Gunshot Wounds of the Face.*							
1. Simple flesh Contusions and Wounds	2	1	..	..	1	..	..
2. Penetrating, perforating, or lacerating the bony structures, without lesion of important Organs	6	3	..	..	3	..	..
3. Ditto, with lesion of the Eye	16	3	..	..	13	..	..
4. Ditto, with Fracture of the Lower Jaw	8	3	1	..	4	..	..
Total	32	10	1	..	21	..	..
III. *Gunshot Wounds of the Neck.*							
1. Simple flesh Contusions and Wounds	8	7	..	..	..	..	1
IV. *Gunshot Wounds of the Chest.*							
1. Simple flesh Contusions and Wounds	9	8	..	..	1	..	..
2. With injury of bony or cartilaginous Parietes, without lesion of contents	6	4	1	..	1	..	..
3. With lesion of contents by contusion, or with non-penetrating Wound..	10	3	1	..	6	..	..
5. Perforating contents	11	6	1	..	2	2	..
Total	36	21	3	..	10	2	..

Classified Return—*continued.*

Classification and Specification of Wounds and Injuries.	Total No. of Wounded Invalids who landed in England from India between April 1858, and Dec. 31, 1862.	Discharged to Duty.	Discharged to Modified Duty.	Discharged to Convalescent Hospital at Yarmouth.	Discharged from further Service, and Pensioned.	Died.	Result not recorded.
V. *Gunshot Wounds of the Abdomen.*							
1. Simple flesh Contusions and Wounds	5	4	..	..	1	..	..
2. Contusion or non-penetrating wound, with lesion of Stomach	2	2	..	..	..	..	..
3. Penetrating, or perforating, with lesion of Intestine ..	2	1	..	..	1	..	..
Total	9	7	..	..	2	..	..
VI. *Gunshot Wounds of Back and Spine.*							
1. Simple flesh Contusions and Wounds	3	2	..	..	1	..	..
2. With Fracture of Vertebræ, without lesion of spinal cord	6	2	..	..	4	..	..
Total	9	4	..	..	5	..	..
VII. Gunshot Contusions and Wounds of the *Perineum*, *Genital*, and *Urinary Organs*, not being at the same time Wounds of the Peritoneum	4	2	..	..	1	..	1
III. *Gunshot Wounds of the Upper Extremities.*							
1. Simple flesh Contusions and Wounds	71	40	8	1	22	..	..
2. With Contusion and partial Fracture of long Bones, including Fracture of the Clavicle and Scapula	47	19	6	1	20	1	..
3. Simple Fracture of long Bones by Contusion from round shot	2	..	..	..	2	..	..
4. With Compound Fracture of Humerus	63	5	11	1	46	..	..
” Radius							
” Ulna							
” Ulna and radius ..							

Classified Return—*continued.*

Classification and Specification of Wounds and Injuries.	Total No. of Wounded Invalids who landed in England from India, between April 1858, and Dec. 31, 1862.	Discharged to Duty.	Discharged to Modified Duty.	Discharged to Convalescent Hospital at Yarmouth.	Discharged from further Service, and Pensioned.	Died.	Result not recorded.
Gunshot Wounds of the Upper Extremities—continued.							
5. Penetrating, perforating, or lacerating the several structures of the Carpus and Metacarpus	29	5	9	..	14	..	1
6. Dividing or lacerating the structures of the Fingers and Thumbs	19	5	..	1	10	..	3
Total	231	74	34	4	114	1	4
IX. *Gunshot Wounds of the Lower Extremities.*							
1. Simple flesh Contusions and Wounds	149	83	8	8	48	1	1
2. With Contusion and partial Fracture of long Bones, or of the bones of the Pelvis in their relation to the lower extremities	50	13	5	2	29	..	1
3. With Fracture of long Bones by Contusion from round shot	3	..	1	..	2	..	..
4. With Compound Fracture of Femur	40	3	3	..	33	1	..
" Tibia only							
" Fibula only							
" Tibia and Fibula ..							
5. Penetrating, perforating, or lacerating the several structures of the Tarsus and Metatarsus	20	7	2	1	10	..	..
6. Dividing or Lacerating the structures of the Toes.. ..	4	1	1	..	2	..	..
Total	266	107	20	11	124	2	2
X. Gunshot Wounds, with direct penetration or perforation of the larger *Joints*, with Fracture of Bone	12	2	..	..	7	..	3
Without Fracture of Bone	1	..	..	..	1	..	..
Total	13	2	..	..	8	..	3

Classified Return—*continued.*

Classification and Specification of Wounds and Injuries.	Total No. of Wounded Invalids who landed in England from India, between April 1858, and Dec. 31, 1862.	Discharged to Duty.	Discharged to Modified Duty.	Discharged to Convalescent Hospital at Yarmouth.	Discharged from further Service, and Pensioned.	Died.	Result not recorded.
XI. Gunshot Wounds, with direct injury to large *Nerves*, not being at the same time cases of Compound Fracture	8	1	..	..	7	..	..
XII. Sword and Lance Wounds	20	8	1	..	11	..	..
XIII. Bayonet Wounds	22	1	3	4	14	..	..
XIV. Miscellaneous Wounds and Injuries received in action	11	5	1	..	5	..	..
Total Wounds and Injuries received in action by Invalids who landed at Gravesend	695	261	64	19	333	6	12
Total Wounds and Injuries received in action by Invalids who landed at Woolwich	35	3	..	..	23	..	9
Grand Total	730	264	64	19	356	6	21

RETURN OF CAPITAL OPERATIONS.

Description of Operation.	Total No. of Wounded Invalids who landed in England from India, between April 1858, and Dec. 31, 1862.	Discharged to Duty.	Discharged to Modified Duty.	Discharged to Convalescent Hospital at Yarmouth.	Discharged from further Service, and Pensioned.	Died.	Result not recorded.
AMPUTATIONS.							
Upper Extremities.							
Shoulder-joint	9	..	..	..	9	..	..
Arm	55	..	3	..	50	1	1
Fore-arm	23	..	1	..	22	..	..
Thumbs	16	1	6	..	9	..	..
Fingers	55	3	16	..	35	..	1
Lower Extremities.							
Thigh, at upper third	1	..	..	..	1	..	..
,, middle third	15	..	..	..	13	1	1
Leg	21	..	..	..	19	..	2
Ankle-joint	1	..	..	..	1	..	..
Medio-tarsus	4	..	..	..	3	..	1
Toes	2	1	1	..	..	..	..
Total	202	5	27	..	162	2	6
EXCISIONS.							
Upper Extremities.							
Shoulder-joint	1	..	1	..	..	..	..
Elbow-joint	2	..	2	..	..	..	..
Total	3	..	3	..	..	..	..
SUMMARY.							
Total number of Admissions for Amputations and Excisions, consequent on Wounds	205	5	30	..	162	2	6
Total number of Admissions for Wounds and Injuries received in action	730	264	64	19	356	6	21
Total number of Wounded Invalids landed in England from India	935	269	94	19	518	8	27

ON THE TREATMENT OF THORACIC AND ABDOMINAL ANEURISMS.

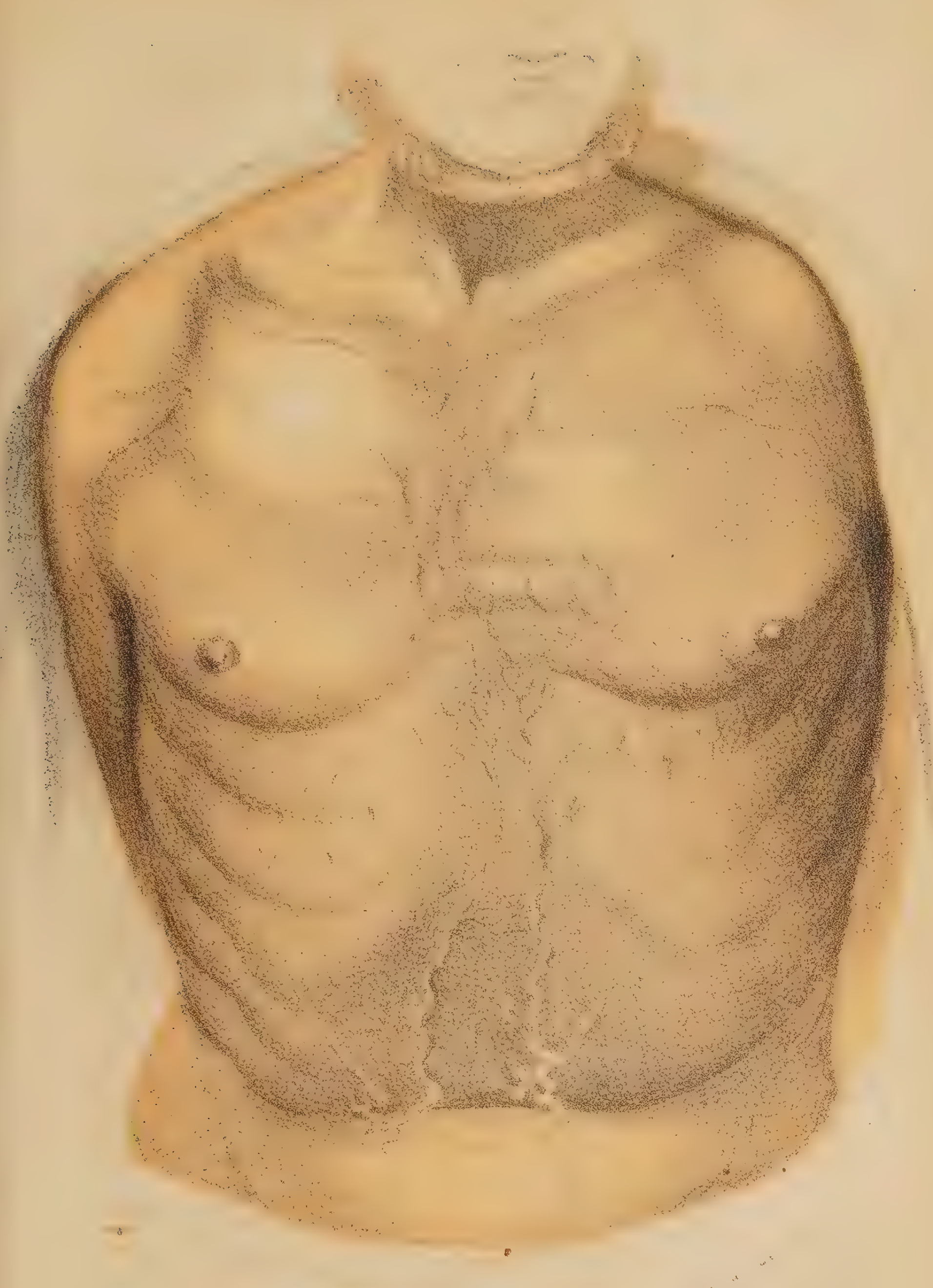
By JOLIFFE TUFNELL, Esq., F.R.C.S.I., Surgeon to the Dublin District Military Prison.

The treatment of external aneurism by compression having elicited this important truth, viz., that in order to the perfect cure of an aneurism it is not necessary that there should be a complete arrest of the flow of blood through the sac, but merely such a diminished current as shall be incapable of giving forcible distensile action to its walls, this fact having been established, the deduction but remains to be drawn that internal aneurism might also be made amenable to treatment, and the views entertained by Valsalva respecting its curability be borne out by practice.

Acting upon this reasoning, the late Dr. Bellingham and I undertook the treatment of a series of cases of thoracic and abdominal aneurism upon a modification of Valsalva's plan, calculated to the bringing about of this desired object. The result was such as to induce our fullest confidence in its efficiency, and in its power of producing cure ; and such indeed has been my own experience, that I do not hesitate to say that I believe it will in a brief period have so justified the expectations of others (who may be induced to try it) as to lead to its universal adoption. I do not therefore in the following pages propose to argue that from analogy we might expect such an event, now and then by possibility in an isolated instance, to occur, but on the contrary, showing from a succession of cases in hospital and private practice, that recovery for the prosecution of all the ordinary ends and avocations of life can be very frequently brought about. The cases too, which I shall here record, were all under my observation for sufficient length of time to enable me to state that the results of the treatment were not any mere temporary improvement, but a permanent and essential recovery, such as to enable the individual to return to his previous occupation, and to pursue it for a succession of years. I do not of course mean to affirm that all cases of internal aneurism are to be considered as curable, or to say that the surgeon may not be frequently unsuccessful in his efforts to produce such a lining of fibrine in the sac as shall be capable of enabling it to resist the impulse of blood injected into it by the systole of the heart, and so controlling the circulation within proper limits make the current of blood to pass on through the diseased portion of the artery innocuously to its branches below ; but I do maintain that in very many instances such can be effected, and the means proper to its accomplishment I shall in this paper endeavour to point out. Indeed, from my own experience, I can see no reason why this result may not very generally ensue. There are, however, two great essentials for its success, without which it is almost useless to make trial of it, namely, confidence upon the part of the surgeon and confidence upon the part of the patient, who must with determination resolve cheerfully and contentedly to submit to the restrictions placed upon him, and implicitly carry out and obey every direction, to the minutest detail that it may be proper to recommend for the purpose of facilitating cure. Without such, disappointment will assuredly ensue.

I have had more than one case where I feel confident cure of the aneurism would have followed had the patient continued steadily to submit to the restrictions imposed, but finding relief from suffering previously endured, and not SEEING any reason for so rigidly adhering to to the rules and regulations imposed, they discontinued abiding by the same, resumed their ordinary modes of living, and in consequence had recurrence of their symptoms in full.

Before speaking of the treatment to be adopted, and the cases fitted for the same, I purpose adducing some of the instances in which the happy results mentioned were obtained. The majority of these were under the observation of others, as well as myself, and as embracing general testimony, there-



Case of Samuel Parks Æ[illegible]

fore must enforce a degree of credit and belief in the efficiency of the treatment, which might perhaps be denied to any individual assertion.

The first case in which I endeavoured to bring about consolidation of the contents af an internal aneurism was in the person of a hackney carman, named Doyle, aged 35, who was admitted into the City of Dublin Hospital in 1851, for an aneurism of the abdominal aorta as large as an orange. He was placed under restricted diet and perfect rest in the horizontal position for three months, being allowed only 8 ounces of solid food and 6 ounces of fluid during the 24 hours. The tumour soon became partially solid, so that when grasped it imparted to the hand the idea of considerable density. The recumbent position was, however, maintained for the period stated. He was then allowed to leave his bed, and three weeks after he quitted the hospital, shortly subsequent to which he resumed his occupation. At the end of eighteen months I met him plying at a railway station, and hired him for the journey I was going upon. He told me that "he had been all right ever since he left the hospital," and was well able to do all his work with the exception of lifting a bucket full of water, which he found great difficulty in effecting from inability to straighten his back.

He stated that he never felt any inconvenience from driving excepting when the car got a jolt in passing over a crossing. Three years afterwards, that is four years and a-half from the time of being under treatment, I saw him again at his stand, and he told me that he had been driving uninterruptedly ever since. This man died subsequently from the effects of an accident.

The next case in which I had the opportunity of trying this system of treatment was also successful. It occurred in the person of a sailor, aged 39, who was admitted into the City of Dublin Hospital early in 1854, for a contusion of the foot. He was suffering also severely from bronchitis, and this led to the examination of his chest. He had cough and wheezing respiration, with hoarseness of voice, and dull aching pain in the left scapular region, with burning pain at night. There were occasional flying pains, but not severe. Upon percussion a dull sound was elicited at the seat of pain in the scapular region, and auscultation revealed a double sound resembling the sound of the heart. He had been exposed to much hardship whilst working at the coal trade, and had drank hard. The symptoms referred to came on gradually and progressively during the six months preceding admission, having first shown themselves about a month after receiving a back fall in a wrestling match.

This man was treated in the first place by blistering over the front and back of the chest, opposite to the seat of pain, the posterior blister being kept open and dressed with the muriate of morphia for some time. Perfect rest and restricted diet were employed, and he left the hospital relieved of every symptom at the end of ten weeks. This man resumed his calling as a sailor, and did all his duties below and aloft.

The third instance that I shall adduce was that of a die-cutter, aged 54, named Parks, the subject of the illustration of this Paper; a delicate-looking man, exhibiting considerable cardiac distress, who was admitted into the City of Dublin Hospital on the 18th of September 1854, with thoracic aneurism, the tumour being 3 inches in diameter, and considerably elevated above the surrounding skin. It was situated to the right side of the sternum, between the second and fifth ribs, occupying the sites of the third and fourth, which, together with a portion of the sternum, had been absorbed. He stated that he had always been temperate and steady, but had worked very hard at his trade, that of die-cutting in steel. For some time back he had experienced a sense of heaviness in his chest, but about five weeks prior to admission he one night, upon taking a pill for constipation, let it pass into the trachea. He was seized with intense coughing which lasted for an hour, and under which he fell exhausted. A few days afterwards he felt severe pain in the breast, shortly followed by the tumour.

He tried to work on at his trade, but the pain was so excessive that he was obliged to relinquish it, and he came into hospital to seek relief. His pulse was 88, and full, regular, and equal at either wrist. The fingers when laid upon the tumour at its most projecting point, pressed against a soft cushiony elastic pulsating part, giving to the touch the sensation of the integument only intervening between the observer and the blood contained in the sac. The pulsation sound was double when the ear was laid upon the tumour-but there was neither *bruit de soufflet* nor murmur of any kind. The aneurism, evidently sprung from the anterior aspect of the right side of the ascending, portion of the arch of the aorta, and was approaching rapidly towards the surface, absorbing in its progress all before it in its course. The nature of the case was explained to him, and the treatment hereafter to be recommended prescribed—being commenced upon the 19th of September and continued steadily until the middle of November. At first he felt the loss of food, and used to look anxiously at the other patients meals, but he had the sense to restrain his appetite, and he took nothing whatever but the regimen allowed. He suffered more from thirst than hunger, and complained a good deal of dryness of the throat and fauces at night which, however, was somewhat relieved by keeping a pebble in his mouth. These annoyances soon became less and less, and upon the 25th of September the pulse had become reduced to 70 and was soft; whilst the pulsation and pain in the tumour had greatly diminished. Upon the night of the 26th an untoward circumstance occurred; another patient, in a fit of maniacal delirium having rushed into the ward, and made for this poor fellow's bed, causing intense agitation and alarm. Port wine and opium were given to him, and confidence after some time restored, but his heart's action became tumultuous and remained so for a considerable time, not regaining its steadiness of beat until the 28th. Ice was at first applied to the tumour, but after a little while a thin piece of linen rag moistened with water was kept as an evaporating medium instead. The tumour now began to be less prominent, and was described by the patient himself as feeling more condensed. The double thump had already disappeared in the tumour, and a single beat only could be felt, corresponding to the natural sound of the heart, but slightly louder.

Upon the 2nd of October the pulse had fallen to 62. He could now lie flat upon his back for two hours at a time, which he could not do upon admission, being then obliged to rest more or less propped up. The tumour gradually became firmer and firmer, and flattened and declined in the centre. Towards the middle of November his general health was excellent, and his bulk and weight had but very little declined. His diet was now slightly increased. He left the hospital upon the 13th of December to go home, where he promised to remain quiet for some time.

I did not see this patient again until December 1857, when he called upon me to request my advice for an irritable ulcer of the leg. Upon questioning him, he said "that the aneurism never troubled him now;" that he was quite well as regarded it, and had been regularly working at his trade as a die-cutter and steel engraver ever since March 1855. When stripped, the first point that attracted notice was the enlargement and tortuous condition of the abdominal and pectoral cutaneous veins, the epigastric, circumflex, and mammary having assumed the condition of large venous trunks, as illustrated in the portrait annexed, which has been reduced from a drawing of life-size taken by Mr. Connolly of Dublin, at the time. The tumour next engaged my attention. It projected to the rigft side of the sternum nearly midway between the clavicle and nipple, where it presented a bulging prominence the size of a small saucer, making this side contrast strongly with the hollow intercostal spaces and marked ribs upon the left. No pulsation was visible in the tumour, now made apparent when any testing object, such as a portion of white paper, was placed upon it. To the hand it felt dense, and the cardiac impulse against the interior of the sac was unheeded. The sound on percussion was dull over a very large space around the heart, whilst to the ear a double sound was given intermediate in time to the contractions of the heart. Upon deep inspiration of the chest this portion did not expand. The heart's sounds were audible over a very large portion of the chest, and the pulsation, aneurismal and cardiac was communicated to the hand or ear for a space of fourteen inches in an oblique line from the right clavicle down to the left hypogastric region. His general appearance indicated a barrier to the return of venous blood to the right side of the heart. There was some congestion of the face, especially incurred upon stooping, with puffiness of the neck and face to a slight degree. There was no interference by pressure upon the trachea; none upon the æsophagus, or the deep veins of the chest. He had some cough and expectoration : after coughing he said he felt pain in the tumour occasionally, but not at any other time. There was no interference with either the carotid or radial pulses, and of the latter the circulation was equal upon both sides. He stated that he lay at night upon the right side to sleep, and cannot rest upon the other. He had been regularly working at his trade, and one of his most recent acts had been the cutting of a new seal for the College of Surgeons in Ireland; and it is a point of interest in connection with this case to consider that from his hand the die was issued which now stamps the surgical diploma of the Dublin College.

The next case that I shall adduce is that of a gentleman from Australia, a powerfully-built and well-made man, 44 years of age, who consulted me for "a beating in his belly." He stated that he had gone out to Australia to the diggings, many years before, where he had toiled very hard, and having made a considerable sum of money by actual labour, sold his prospect, and came home, as he found himself getting stale and incapable of work from rheumatism and fatigue. This he said had been coming on him gradually for a year before he left the diggings, but its first occurrence was consequent upon the lifting of a heavy piece of quartz. The "beating of the belly" he first noticed on board ship, upon the passage home, a short distance from England, and stated that he discovered it upon going to the watercloset the succeeding day to an evening upon which he had danced a jig or reel, and during which he had made great and continuous exertions. He showed this "beating" to the surgeon of the ship, who told him that its nature was most serious, and recommended him to come to Dublin and place himself under my care, which he did immediately upon the vessel reaching Liverpool. He had suffered intense pain of intermittent character, and I found him in great alarm, with that general tremor and distress that indicates so often cardiac disease; but upon the closest examination I could not detect any palpitation or other affection of the heart, and I believe it to have been solely from the fear of sudden death. His habits on board ship had during the whole voyage, at least up to the occurrence of the the tumor, been those of perfect indolence, eating and drinking to satiety up to ten days before, so that he was grossly fat, and the dyspnœa, which he had upon exertion, I attributed in a great measure to obesity alone. The walls of the abdomen were one mass of fat; through these, however, I could discover the "beating." It was an aneurism of the abdominal aorta at the level of the umbilicus, certainly five inches in length, if not more, and of corresponding breadth, forming an ovo-globular sac. The impulse was powerfully strong, the aneurism apparently springing entirely from the front of the artery at the lower portion of the vessel just above the bifurcation.

I asked him whether the tumour had increased rapidly in size, and he said that he had so dreaded to touch it that he had not examined it at all, but he thought that from the pain he suffered it must be rapidly increasing in size. When laid upon his back with the legs well drawn up, and the abdominal parietes relaxed, a loud bellows murmur was audible by the stethoscope and ear. The pulsation was single. In the erect position the *bruit* could still be heard, but much less loudly than when recumbent. The bowels were confined, for he had been afraid even to go to stool lest the "beating" should burst, as the surgeon of the ship told him that it might, and in spite of the advice of the surgeon to keep the bowels lax, he had avoided encouraging their action.

The feature of interest which struck me in this case was the existence of an aneurism of this size in a person so fat, arguing that its dimensions must have very recently expanded, and that, if its existence was a consequence of the accident at the diggings, its presence could have caused only a mere rheumatic aching, and not in any way interrupted digestion or the general health. The tissues forming the walls of the sac were circumscribed and perfect, so that the aneurism was not diffused.

I explained to this gentleman the nature of the case, and the rest and regimen that he must maintain. There was no reason for enforcing obedience, for he was willing to undergo anything that would hold out a hope of averting death. I need not specify treatment, but say that within three weeks the outline of the tumour could be *felt, with a pulsation within*, marking the fact that there had already formed a solid lining to the sac. This deposit gradually increased, and in five weeks, or a little more, had become dense. The recumbent position, however, was maintained for thirteen weeks. The bellows murmur became gradually more and more soft, and the pulsations less distinct. At the end of the period named, this gentleman sat up in bed, then gradually moved about, but, for a long time, would not trust himself to do more than creep across the room. By degrees, however, he gained confidence in his powers but remained for some time in Dublin, fearing a relapse. He spent a year in England, enjoying himself greatly, and then sailed for Melbourne where he had purchased land, and when I last heard of him, was perfectly well, that is to say, free from pain and in the enjoyment of life.

Another case that I may mention is one of abdominal aneurism, occurring in a gentleman thirty years of age, and its history is as follows:—The patient in question, first consulted Mr. Solly on the 16th of October, 1855, for severe pain in the epigastric region, and when visited by him, was found in a state of intense agony and exhaustion. He was thin, with a hectic flush, and sallow and worn by suffering.

He stated that four and a-half years before, when hunting, and riding a horse that rushed at his fences, he one day felt, in taking a down leap, a sudden and severe pain in the abdomen, and that from that instant he never afterwards was really strong. He seemed to have been impressed with the feeling of some serious mischief having occurred; but still, for a period of two years, he did not experience more than a slight aching pain in the back. He then felt an increase of the uneasiness at times, but it was not constant, and it was only six months prior to calling in Mr. Solly that the pain became frequent and severe. The case had been previously pronounced to be "spinal," and treated accordingly. Subsequent to this he had nausea and vomiting after meals. On examining the abdomen, a distinct pulsating tumour, situated a little above the umbilicus, about the bifurcation of the aorta, was detected, the pulsation being lateral as well as from behind forward, and accompanied by *bruit de soufflet.* The bowels were at this time confined, and the discharges, when passed, were solid, lumpy and hard. Two drops of croton oil were ordered immediately, and a draught containing one grain of the muriate of morphia with three drops of tincture of aconite to be taken every four hours.

Upon the 11th of January, 1856, I met Mr. Solly in consultation upon this case. The abdominal tumour now measured four inches in length by two and a half inches in width. It was of an oval form, and pulsated strongly in all directions, the blood entering with a whirring, whistling sound. There was no pulsation whatever in the right iliac, or femoral artery at the groin, though there was a slight pulsation at the site of the saphenic opening in the thigh. Under the circumstances, I had not the slightest hesitation in pronouncing it to be an aneurism of the abdominal aorta, and recommended the restricted diet and treatment, as detailed in this paper, with perfect rest in the recumbent position for three months.

This plan was steadily carried out for nine weeks, at the end of which time the pulsation was less, the *bruit* not so sharp, and the patient able to rest well without opiates at night. He now removed to the sea coast, and bore the journey well, and upon the 25th of May, the surgeon under whose care he was placed, writes as follows:—"You will be pleased to hear that —— is progressing favourably, and that nature is performing a cure which no operation could have done." Upon the 25th of May, he again writes:—"I yesterday made a most careful examination of ——. The result is as follows.—As to the aneurism, I can scarcely detect any pulsation below the umbilicus; I have strenuously advised the most rigid adherence to your directions as to diet, quiet, &c." During his stay at the sea, he had occasional paroxysms of pain, but none of severe character until the 9th of July, when his medical attendant was summoned to see him, and found him writhing in agony. It appears that he had been pressed by a friend to accompany him upon a cruise, and whilst keeping quietly on board he got on very well; but, having landed, he walked up from the beach for half-a-mile, and was immediately attacked by pain in the tumour.

Chloroform inhalation, with opium injections, having failed to give relief, he was ordered ven. sec. ad ℥vj. the same treatment which had proved useful in relieving the pain before. He bore the bleeding well, no feeling of faintness, the pulse became softer, and he was decidedly relieved.

The blood the next morning exhibited a firm coagulum, and was cupped and buffed. Sickness having, however, returned, he was recommended a strong aperient, and blister in front of the abdomen, to be dressed with morphine.

Upon the 5th of September, he was free from pain. Upon the 11th of January, 1858, being in Ireland, he called upon me, to show himself as perfectly recovered. He said that he rode regularly on horseback, and had driven a drag for fifty miles at a stretch, and that the only thing that annoyed him was heartburn, which he had daily after breakfast. It did not, however, follow upon his dinner meal.

I carefully examined the abdomen and found a *hard* pulsating tumour, measuring three inches vertically, and four inches from side to side, situate equidistant above the umbilicus, a *soft bruit de soufflet* being audible below the navel, a single thrump above. The *bruit de soufflet* extended throughout the left iliac artery, and the circulation was perfect in the left extremity. Upon the right side there was no pulsation in the iliac, femoral, or tibial vessels. The hearts' action was regular, and pulse natural at 74. I congratulated him upon his recovery, but cautioned him strongly against hunting or taking violent exercise of any kind that might put the aorta suddenly upon the stretch,—telling him that the aneurismal sac, though strengthened by fibrine, was not elastic, and would not bear a strain. The patient declined to be convinced that he had ever had an aneurism. I repeated my injunctions once more in a firm but quiet manner; he left my study and I never saw him more. He recommenced his hunting, and driving four-in-hand, and yachting, and continued to take violent exercise of every kind until August, 1859, when he died suddenly, from the bursting of the vessel. His bowels had acted at noon, when he called out suddenly and grew deadly pale and faint. He lived for about an hour afterwards.

"The cause of death was the bursting of an aneurism of the abdominal aorta, immediately above its bifurcation, nearly four inches in length, and between two and three in breadth, the rupture taking place by a small opening at the back part of the aneurism, a little to the inner side, and just above the origin of the left iliac artery. The coats of the aneurism, at the lower part, were plated with ossific and fibrinous deposits. The vertebræ were not diseased; the cellular tissue behind the viscera was very extensively infiltrated with coagulated blood."

That the diagnosis was not an easy one may be inferred from the fact that two London hospital surgeons, and one hospital physician, all men of much experience and high standing in their profession, after careful investigation of the case, and examination of the patient, declared that he had not any aneurism at all, an opinion coincided in by two equally eminent Dublin Surgeons. This case should teach us to be very guarded in sanctioning violent exercises for patients who exhibit such symptoms.

Such are some of the cases that have come under my observation, and such the results of the treatment which I would have recommended. I can speak most confidently of its success, and would urge its adoption by others.

Aneurism, then, we must regard as a disease which, when once originated or commenced, has a continued tendency to progress unless interfered with by treatment, its enlargement at first being to the detriment, and ultimately to the destruction of life. Under the influence of pressure from within, the adjacent structures (with the exception of fibro-cartilage) all succumb. Bone yields and vanishes under erosive absorption. Nerve-tissue becomes teased out by tension, and the functions proper to it cease to be discharged. Mucous surfaces give way to ulceration, and serous membranes to laceration, whilst the tegumentary covering of the body, under the agency of pressure, dies equally, and forms a slough, which ultimately opens, and the aneurism bursts either by a small aperture or a rent-like laceration, death eventually ensuing upon both. Life, it is true, may be terminated in other ways, such, for instance, as by exhaustion from continued cough so unceasing as to prevent sleep (and thus wear out the patient); or, more shortly, by creating paroxysms of dyspnœa terrible to suffer. It may be by one means or the other—by a sudden or a lingering mode that life is brought to a close; but, in each case, death will inevitably ensue if the aneurism is not met by art and retarded.

To be of use, then, our treatment must be had recourse to ere the pressure of the aneurism shall have exerted a malign influence upon the structures in its vicinity, and inflicted irreparable injuries in consequence, such as those above alluded to; for cure, even if brought about, will come too late, when, in cases of thoracic aneurism, the tumour has been allowed to grow so large as that, by its pressure (when consolidated), the air-tubes shall be destroyed.

To be successful, then, our measures must be adopted in fit and proper time; and I propose, therefore, before referring to the treatment about to be recommended, speaking shortly of those symptoms which characterise and pertain to thoracic and abdominal aneurisms in their earlier stages, whilst situated wholly within and before they exhibit any tumour presenting externally, or such as can be recognised by the eye.

We not unfrequently find an aneurism of the arch of the aorta springing from the central and posterior portion, pressing upon both trachea and œsophagus, which eventually kills without presenting any tumour discoverable during life, but which, if taken in time, might very possibly have been effectually overcome by retardation, and the filling up of the sac with fibrine.

This differential diagnosis, as it has been termed, of the lesions of the various parts in the mediastina and abdomen, is the main point for attention, for upon the correctness of the diagnosis must the sequel depend.

We must call, then, to our aid each symptom, and take into consideration every little fact, however distant and remote, that, combined with others of more generally rocognised and direct character, may tend to confirm or dissipate our conclusions as to the case in question being one of aneurismal tumour.

It is, I repeat, in the earlier stages of aneurism that we can expect the fullest and happiest results from treatment; and it is in these that the symptoms are so equivocal that we must consider well the whole of the phenomena consequent upon the development of this disease, and by analysis and deduction endeavour to form a correct judgment.

The symptoms, then, attendant upon internal aneurism, which will be more or less present according to the development of the tumour, we may practically consider in reference to the regions they affect. We may place the head, face, neck, thorax, abdomen, and back in consecutive order, as parts of the body to be separately examined in the first instance, and the upper and lower extremities in the next, for, by thus doing in a regular and systematic manner, we shall allow few points bearing upon the affection to escape us. When examining for aneurism, however, we should always bear in mind the possibility of the thoracic and abdominal portions of the aorta being both simultaneously diseased, and two tumours co-existing, and therefore not rest satisfied and conclude our investigation of the case upon the discovery of a single aneurism.

First, as regards head symptoms, we have cerebral torpor, pain, and confusion of ideas, occasional giddiness, with consciousness sometimes all but lost. In the face, we find the conjunctiva sometimes suffused, whilst, in other instances, the countenance will be of a tallowy colour, more or less swollen, with the lips sometimes even livid. The veins of the neck, too, in some cases, present symptoms of tumefaction from implication of the descending cava and innominata veins, either by the aneurismal tumours being adherent to these vessels, or pressing upon them, thus narrowing the channel, and preventing almost altogether the return of the venous blood to the heart. Contraction of the pupil of one or both eyes from pressure on the cervical sympathetic, as pointed out by Dr. Reid, is an additional symptom to be noted, and the evidences of which are visible to the eye of the observer in the eye of the patient.

Raucous voice and aphonia, too, both become valuable aids in diagnosis. The first of these we find in cases where the aneurism presses upon the trachea at its bifurcation, the indentation in the trachea producing this alteration in the tone of the voice; whilst aphonia we learn, by the experience of post-mortem observation, to be dependent upon the influence exercised by the tumour in pressing upon the recurrent laryngeal nerve, the pneumogastric being sometimes spread out into a kind of cellular web where the recurrent is given off. Stridulous breathing must be regarded in its separate and special bearing. Thus, in one case the stridor will be dependent upon a cause that is above, or laryngeal; and in another, where the obstruction is tracheal, and situated below. When the breathing is stridulous only, unaccompanied by aphonia, and when dysphagia is absent, we may then conclude that the tumour lies to the right of the trachea, pressing upon it and diminishing its calibre, but not implicating the œsophagus or recurrent nerve.

Thus, by the aid of ordinary hearing, we are enabled to form an opinion as to the causes productive of these various sounds, and to estimate at their real value the relative symptoms of stridulous breathing, form of voice, and character of cough, and from these the site and nature of the tumour. Dyspnœa, too, is a valuable sign, but it must ever be taken into consideration in connection with the fact, namely, that dyspnœa is increased in exact proportion to the relative degree of irritability of the air-passages present in each individual case.

Thus much may we learn from the conditions of the head, neck, face, and organ of voice.

In the chest we have the feelings of the patient to assist us, with the adjuvants of auscultation and percussion; auscultation pointing out the relative state of the respiration upon the corresponding sides of the chest, with the absence or presence of bruit; and percussion demonstrating the amount of dulness (if any) which latter, when existing with absence of respiration at the same spot, is a symptom that we should always carefully regard. In the chest we have, however, often a serious obstacle to contend with in the form of bronchitis of chronic character, sometimes affecting one lung, but not infrequently both, interfering considerably with auscultation, and masking the real cause of dyspnœa when present.

With reference to bruit de soufflet, whilst its presence may be depending upon other causes than aneurism, its absence is no proof of the non-existence of the disease, for there is frequently no bruit whatever, although there may be an aneurism of large dimensions; whilst a largely dilated state of the aorta without saccular development, may be productive of bellows murmur; and if, as occasionally (though rarely) happens, a ring of bone should encircle the commencement of the aorta, a sound which has been described as the trumpet bruit,* will be loudly and distinctly heard.

The form of the opening influences the form of bruit much more than the size. Thus in cases where the communication between the aorta and the aneurismal sac is very large, such as two inches in length, the bruit is often less distinct than where the aperture is only just sufficiently large to admit the forefinger of an adult, but perfectly circular and round. The form of soufflet, when it exists in connection with aneurism, may be considered then to depend upon the nature of the opening; thus a smoothly-round opening is found to give a soft blowing sound, whilst a rough and irregular aperture is accompanied by a very rough soufflet. Bruit too may occur in connection with aneurism, yet so existing as to be mistaken for the soufflet depending upon valvular disease. Thus aneurism of the heart itself emanating from the vicinity of the left auriculo-ventricular opening and pressing forwards may cause symptoms common to the narrowing of the left auriculo-ventricular opening, and from the far greater frequency of the latter disease the bruit and fermissement, which are really dependent upon aneurism, may be mistaken for that of valvular disease. Soufflet, then, taken *per se*, is not a symptom of diagnostic value as great as when it occurs in combination with other abnormal conditions of the thoracic cavity. Thus undue pulsation, dyspnœa at intervals, oppression of the precordial region, with difficulty of swallowing solid food. These in combination point to the true nature of the disease. Of every symptom, however, there is none so peculiar to the disease as pulsation. Now, when this occurs to a considerable extent, when the pulsation of the heart is very distinct (the organ itself not being enlarged), it may be owing to the aneurism springing from the aorta about the junction of the thoracic and abdominal portions, the aneurism projecting forward the heart itself. Again, when the pulsation is distinctly felt in the anterior and posterior surfaces of the chest at the same time the possibility is suggested of two aneurisms co-existing. With reference to pulsation it is true that pulsating cancer of the lung may be taken for aneurism of the aorta in the ascending or descending portions of its arch; but the progress of cancer is so much more rapid than that of aneurism that in a short time its true nature will become manifest, in addition to the other general symptoms which characterise malignant disease. In cases of abdominal pulsation we have to consider the possibility of the tumour being other than aneurismal, and we may find tumours receiving pulsation from the aorta behind to be dependent upon various causes; thus scirrhus of the mesentery, scrofulous disease of the mesentric glands, or collections of hardened fæces in the pouches of the colon may exist; but here, in all these cases, the absence of lateral dilatation will assist us materially in forming our diagnosis. There is one point, however, that cannot be too strongly commented upon or borne in mind, and that is, that all the stethoscopic phenomena of aneurism that accompany aneurism of the aorta, such as bruit de soufflet, stridor and dysphagia do at times intermit, and for a while be absent.

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* By Dr. Corrigan, of Dublin.

We cannot account for this state of things in any other way than by regarding it as the result of temporary dimunition of the diastolic condition of the aneurism, and consequent diminution of pressure upon part implicated, from reduction of the heart's action, certain it is, however, that the case is so, and we must keep the knowledge of this fact always in remembrance.

In the abdomen we have the same variety of assistance that we bring to our aid in examining the chest with the addition of manipulation. Here the obesity of the individual in some cases greatly obstructs tactile examination, and renders the task of deciding as to the nature and cause of abdominal pulsationa far different matter from what it is in a thin person; but to a certain extent, after the employment of purgatives and temporary low diet, the use of medicines to correct flatulence, assisted by a gentle friction to the abdomen, and an easy recumbent position, with the walls of the abdomen rendered lax, we may, in almost every case, be permitted to make such an examination of the tumour as will enable us to draw a correct conclusion as to its nature.

The influence of inspiration upon pulsating tumours of the abdomen is of importance in forming a diagnosis; thus upon a cancerous tumour inspiration exerts its influence, whilst in aneurism of the aorta it has no effect. Should the mesenteric artery, however, happen to be the seat of this disease, then respiratory motion might affect it; but in no other aneurism would such be the result, and aneurism of the mesentery is very very rare.

And here it may be mentioned that in the diagnosis of abdominal tumours, with pulsation, the rules laid down by Doctor Ablan should always be borne in mind, viz., that aneurism originates gradually, and the pulsations increase in strength by degrees, whilst other abdominal pulsations begin suddenly, and are most violent in their early stage, abating after they have lasted for some time. Bruit too in this region much more frequently accompanies aneurism than when the thoracic aorta is the seat of disease, and this adjunct to diagnosis will be found (in reference to the bruit) in the fact of its often being present when the patient is recumbent, and absent when the individual stands erect, from the difference of the tension by gravitation of the blood upon the walls of the aneurismal sac. The stools, too, in abdominal aneurism, as if from sympathetic irritation, or a desire to expel something abnormally present, will occasionally be involuntarily discharged. The extent of the tumour in the abdomen is not always commensurate with the disease, but depends upon the nature of the special case. Thus the aorta need not be much, if at all, elevated from the spine for extreme pain, almost anguish, to be present; as when the aneurism springs from the posterior wall of the vessel, the cavity for the blood being very small, formed in the bodies of the vertebræ which become absorbed before its pressure. This fact leads to the consideration of another most constant and valuable symptom both in thoracic and abdominal aneurism, and that is pain; which feeling varies from the slightest aching to the intensest agony that can be conceived.

In all cases then of aching pain in the back, and loins (of any kind) we should examine carefully with the stethoscope; for a case of aching in the lumbar region that might be regarded as arising from lumbago; or of fulness in the loins, with pain passing down the thigh, which might easily be mistaken for lumbar abscess, will be diagnosed at once as aneurism, should bruit de soufflet be heard, and thus point to the real nature of the case.

In aneurism of the abdominal aorta pressing upon and eroding the vertebræ, in addition to the boring and burning pain which it universally produces, there is in some cases an aching extending from the loin to the knee, with an occasional darting pain exactly resembling sciatica; and in other instances numbness and want of motion in the lower extremity. In these cases it will be found that the erosion of the bodies of the vertebræ has extended to the points at which the nerves pass out from the spinal canal, and further when there is pain of intensity in degree extending down from the seat of disease in the back to the groin and along the spine, this is an indication of infiltration of the tissues behind the peritoneum, and into the psoas muscle with blood. With reference to pain, we may then, as a general rule, couple the amount of pain in the back, and elsewhere, with the progress of the aneurism upon the bony and nervous structures of the spine.

For symptoms connected with the extremities we shall, in the arm, find them in the varieties of circulation and the pulse at the wrist. This may be of various kinds, as to volume or force; it may intermit where the heart is affected, or be altogether wanting; it may be absent at the wrist in one case from pressure upon the subclavian artery at its origin, and in another by the cylinder of the artery being plugged by a portion of fibrine extending into it from the cavity of the aneurism where the artery at its origin is imbedded in the sac, this pedicle even sometimes completely filling the artery, passing into it for several inches. This implication of the trunks given off from the aorta necessarily influences the circulation through the branches below, and an absence of pulsation in the right radial artery of the wrist may lead us to infer that the innomiata artery is more or less pressed upon and engaged.

Aneurism of the aorta, however, at or near its origin, may exist to a considerable extent without implicating the pulse at the wrist, which may be good and equal at either sides in one case; but this is only when the ascending portion of the aorta, between the heart and the origin of the vessel given off from the arch, is affected.

In the lower extremities there will occasionally be absence of pulsation in the femoral and its branches, whilst pain, of sciatic character, will shoot through the limbs, occasioned by the pressure of the aneurism upon the origins of the spinal nerves; these assist in pointing out the true nature of the affection. Numbness of the fingers and toes, too, especially when exposed to cold, are further indications of the disease. Indeed a general coldness of the whole body is also not an infrequent attendant, arising as if from an interference with nervous influence and the generation of animal heat.

Such are the principal symptoms which are characteristic of the presence of internal aneurism; still, in determining the presence of organic disease, we must always bear in mind the possibility of all the symptoms present being dependent upon affections of the general system, such as anæmia or hypochondriasis, and the increased or decreased force and volume of the pulse, as well as its irregularity or intermittence, as being the normal or constitutional condition of the circulation of the patient. The presence, too, of hysteria, with other nervous symptoms, should be looked for, as it is in individuals so affected that abdominal pulsations especially are so frequently felt.

With reference to the cause of aneurisms of the aorta, we find them to be (by the patient) very frequently referred to some sudden injury; indeed so commonly so as to make it impossible but to connect the immediate occurrence of the disease with the violence complained of. Still it is hard to conceive the occurrence of a purely *traumatic* aneurism of the abdominal or thoracic aorta, when we take into consideration its coverings, and the protection from direct violence which is afforded by the surrounding parts to the main artery in these situations, as well as the elasticity of the artery itself, which, when in a state of health, must, we should consider, be sufficient to allow of the vessel accommodating itself to any motion whatsoever, to which the spinal column could by possibility be subjected. Indeed, as a counter proof, we find that aneurism does not occur unduly amongst acrobats and posture masters, men whose spines are so frequently, and so suddenly distorted.

To take, then, a correct view of the case, we must, I think, be prepared to allow that, in every instance of aneurism of the thoracic and abdominal aorta, the disease results from the elasticity of the vessel being impaired by structural change, which change produces brittleness to such an extent as to render the artery incapable of having any stretch whatsoever placed upon it without its lining membrane giving way.

As to the exact constitution of an aneurism when once formed, and the relative degree and extent of the implication of the several coats of the vessel, and the distinctions as to true and false, differences of opinion ever have and probably ever will exist; but, for the purposes of treatment, this division is practically of no moment or avail. The artery generally we know to be so degenerated from atheromatous deposit as to be utterly incapable (*per se*) of contributing any great barrier of resistance, therefore it is to its cellular investment alone that we must attribute the function of constituting the sac in all cases of aneurism of more than a very small size. This external cellular sheath is never affected by atheroma, and its strength, from the interlacement of its fibres, is such as to allow of very considerable force being imparted through the striking of the column of blood against it. Still (unaided) it is not sufficient permanently to resist the distention, and this accession of strength, therefore, we seek by treatment artificially to supply. Practically the question to be considered in each individual case is as to whether the aneurism is circumscribed or diffused, for in the former of the two only can any treatment be anticipated to avail. When diffused, nothing can be done further than to alleviate pain; but, when bounded by a defined and perfect covering, that casing we may hope to strengthen. If, however, the blood has burst through at any one point the chamber into which, under undue pressure from within, the artery has become dilated, then all hope of interference is gone, and death in one or other of the following ways must speedily ensue, and death will follow exactly in proportion to the syncope produced — rapidly, almost instantaneously, in one instance, slowly and by degrees in another— the rupture of the aneurismal sac differing completely. In one instance the individual shall be occupied and busy, or engaged enjoying a meal, when he will scream out suddenly and die. At another, he will cough up a tea-spoonful of blood, then, perhaps, grow gradually faint, have, after a while, two or three stools of large size, and containing nothing but blood, and, getting weaker gradually pass away. The rupture of the sac of the aneurism may be valvular or direct,—a mere pin-hole or a rent-like laceration. It may burst into one of the natural passages, or into the solid or hollow viscera of the chest or belly. It may be extravasated into the sub-peritoneal structures or amongst the muscular tissues. Into one or other, by routes which it is unnecessary to dwell upon here, the fatal termination will assuredly be brought about, unless we can interpose to prevent the laceration of the sac. Now there is but one way by which this can be effected, and that is by retardation or fibrinisation, —in other words, by the production artificially of that result which, when taking place under the influence of nature unaided, is termed spontaneous cure, where the blood leaves upon the inner surface of the sac, in its passage through it, layers of fibrine, and, depositing successive strata, by degrees diminishes the cavity of the tumour, and, ultimately, all but fills it up. This deposit which we seek to obtain from the blood, for the obliteration of the cavity, is not coagulum, but fibrine; such as, under the name of polypus, is so frequently met with in the heart, extending thence into the great vessel, and formed there during life. When long deposited, this fibrine becomes so intimately connected with the sac, that it is difficult to believe that it is not organised and the product of inflammatory exudation, similar to the warty vegetation which, as lymph, we see so frequently deposited upon the aortic valves. All this takes place from the blood alone. The idea put forward by a foreign writer, that lymph exudes from the inside of the sac in the consolidation of an aneurism, and thus occludes the cavity, is totally incorrect. There is no lymph whatever connected with the question. It is no vital process, but simple mechanical deposit. Inflammation is not present in any form; and the solid matter that at first lines and ultimately fills the sac is simply the fibrine of the blood.

During the progress of cure of an aneurism, the pulsations through the vessels below may become almost lost for a while and then be restored, the soft deposit in the sac at first acting as an obstructant, then becoming denser and more consolidated, and allowing the blood to flow past. In aneurism of the extremities, cured either by ligature or compression, the solid contents of the sac are gradually absorbed, until at length nothing but a kernel-like body remains to point out the site of the former disease; but in aneurism of the aorta it is different. The fibrine deposited in aneurism of the thoracic or abdominal aorta for protective ends remains persistently, because the transit of blood is not totally arrested; for although the aneurism proper may be filled with fibrine and coagulum, there is still left a passage of the ordinary size of the artery, and this is the end we have in view.

The size of the heart and the condition of the aortic valves materially influence the condition of the aneurism by the effect which is produced upon the circulation. Thus, when the pulse at the wrist is very strong, and the pulsation in the chest forcible and extensive, with the aortic valves capable of discharging their functions of preventing regurgitation by perfect closure, here we may expect to find the heart itself to be large. Now, such a state, when combined with an aorta which is healthy for a great portion of its course, and which is capable of transmitting with undiminished force the blood pumped into it by the heart, causes the rush of blood into the aneurismal sac to be violent, and the aneurism difficult to cure; whereas, on the contrary, when the aorta (as it often is), instead of being healthy, is, in some portion of its arch, dilated into a cavity, with its walls of cartiliginous or almost osseous tissue passively recipient of the blood injected into it, and not transmitting it with impulse, here cure is comparatively easy. Indeed, so passive does the aorta become in this state, that the fibrine of the blood will sometimes lodge in the dilated portion of the arch, and deposit itself in layers of varying consistence, in character precisely similar to that deposited in an aneurism proper.

Thus, in the hope of cure by retardation, the prospect will be greater in a case of enlarged heart, with an atheromatous aorta, than in that where the aorta is healthy; but the termination of life cannot be looked upon as likely to be as remote in the former case, because the general diseased condition of the blood-vessels is greater, and the prospect of aneurism occurring elsewhere in the system very considerable.

Now that which we have to contend against is the distensile action of the heart, the forcible influx of the blood into the sac from which has the effect of thinning and destroying all before it. In the carrying out of the treatment by retardation, our whole object therefore is so to modify the circulation as to rob it of its noxious character, and convert it into the medium of cure. This is to be effected by three means scientifically and systematically carried out, viz., by rest, regimen, and the employment of such remedial agents as may be necessary to especial ends. The plans advocated and followed by Valsalva (or such at least as have been put forth as advanced by him) whilst good in intention are in practice radically wrong; and the repeated bleedings from the arm performed in certain instances to the extent of reducing the individual to a state that he could hardly get out of his bed, these measures are not only unnecessary and uncalled for, but utterly erroneous and false.

This point has been well treated of by the late Dr. Bellingham, who, in writing upon it, remarks that frequent venesection cannot but be expected to operate injuriously, and to retard recovery rather than promote it, firstly, by removing the fibine, which is an essential agent in the cure; secondly, by producing a watery state of the blood, when blood rich in the solid ingredients is required; thirdly, by tending to quicken the circulation when it is desirable that it should be rendered slower; and fourthly, by unnecessarily debilitating the patient, and inducing an anæmic condition of the system. The starvation, too, as recommended by Valsaloa, in combination with the bleeding, would prevent the fibrine when once removed from being renewed. In this treatment, on the contrary, we require the health of the individual to be as perfect as possible, and the blood in a highly fibrinised state, for it is to be recollected that from the fibrine of the blood alone can we draw the material of repair, and our object is to increase this fibrine by reducing the watery element. We require to diminish the heart's action in volume, but we also need to have its frequency reduced, the quantity of blood in the system must be lessened and the force of the circulation reduced, but this must be effected through cutting off the supply of fluid and acting (as necessary) upon the exhalents of the skin, the kidneys, and the bowels, and not by taking blood from the arm. We desire to diminish the heart's action in order in the first place to prevent further enlargement of the aneurism, and in the second with a view that the sac (acting under the known law of all empty, or comparatively empty, cavities, having a disposition to collapse shall correspondingly contract, and thirdly, that the blood being so diminished in its current as to have only a wave-like form shall, by continued deposition, first line the parieties of the cavity, and alternately fill it up altogether. Fibrinisation is to be effected then by maintaining the quality of the blood, and preserving the patient's health, bleeding impoverishes the blood by removing the fibrine to which we look for cure, and frequent venesection increases the frequency of the heart's action, and thereby produces an injurious effect. The objects we have specially in view will all be attained by the recumbent position and a restricted diet, and such remedial agents as shall produce quietude by alleviating pain.

The recumbent position is the first and principal point to be attended to, and if this cannot be steadily maintained for a considerable length of time, all other treatment will fail. In the horizontal posture the circulation is tranquilized, and the heart's action becomes regular and slow. I have mentioned "a considerable length of time." I mean by this expression two months or ten weeks at least, and this period to be passed without the patient, if possible, sitting even once erect. In carrying out the treatment we require therefore a light and cheerful airy room, where by day the patient shall have an opportunity of seeing what is going on, and we must take an especial care that the sun shines upon it, for nothing is more depressing to the spirits of a patient than being immured in a chamber with a northern aspect which never receives a gleam of sunshine. The next point to attend to is the bed. It must be of camp form, so that the bowels when acting can be easily relieved by an assistant with the pan ; or (if not acting) by the administration of an enema without disturbing the patient, and yet it must not be too small, as the sufferer would otherwise feel cramped and confined, and not sufficiently at ease. Upon the bedstead must be placed two *good* hair mattresses, one upon the other, both full and elastic. Upon these, in proper site to receive the sacrum and hips, a large water cushion properly but not too much distended. Over this a double blanket sewn at the corners and sides to the lower mattress, and upon the blanket a fine linen sheet similarly attached, this being done to prevent all wrinkling in the bed and disturbance of the sheet on which the patient's legs and body lie, another linen sheet (folded as after a lithotomy case) must be laid transversely to receive the buttocks, and be drawn from beneath from time to time. Three or four good feather pillows to prop the shoulders and receive the head, together with the over-clothes to complete the bed ; on which, when once settled comfortably, the individual must be content to lie without ever changing his position further than to turn from side to side, or occasionally round upon his face, should such movement give relief from dorsal pain, as it sometimes will. A urinal and bedpan must be at hand, and an attendant always ready to afford such aid as the patient may require, and to read to, converse with, or amuse him. The diet, under ordinary circumstances, must be confined to three meals served at regular intervals, and restricted to the following in kind and in amount :* For breakfast, two ounces of white bread and butter, with two ounces of milk, or cocoa. For dinner, three ounces of broiled or boiled meat, with three ounces of potatoes or bread, and four ounces of water or light red wine. For supper, two ounces of bread and butter, and two ounces of milk or tea, making in the aggregate ten ounces of solid and eight ounces of fluid food in the twenty-four hours, and no more. Thirst, if present, (as at first it most probably will be, especially during the summer months) must be met by holding a small pebble in the mouth from time to time to favour the secretion of saliva, or if procurable, by sucking the smallest possible portion of pure ice, this diminished quantity of liquid reducing the duty of the heart and relieving the action of the lungs, the effect upon the blood being at the same time to render it thicker and more fitted for deposit. Nature is thus placed in the most favourable position to work out a cure, and we may in some few cases leave her to perform it without any further aid ; but such is the exception. Hence, therefore, it is necessary to offer a few remarks upon those remedial agents, from whose employment we may derive assistance and advantage during the progress of treatment, for in the majority of cases it will be found that recourse must be had to the following in one or other of their forms, viz.: Anodynes, aperients, narcotics, sedatives, and tonics, given internally, or used as external applications.

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* In some irritable constitutions this restriction in diet is very irksome, and the patient becomes intolerant and restless. Now here, instead of attempting to persist in the withholding of food, the appetite should be indulged to the satisfying of the patient, so as to keep him tranquil, but no more.

Quietude, and the *most perfect* rest both by night and day, being the prime adjuvants to cure, from anodynes, therefore, shall we derive the very greatest advantage. As an anodyne lactucarium (if properly prepared, and if it can be obtained from a source that can be depended upon), is a very valuable medicine given either by itself in the form of pill, or combined with lupulin and hyoscyamus, and the following formula for its administration will be found applicable to the different undermentioned states. In simple wakefulness this pill may be administered, viz., 5 grains of lactucarium to be taken at bedtime, and repeated during the night if necessary ; when, from the pressure of the aneurism, there is tracheal or bronchial irritation, with cough, then the following combination : lactucarium, 20 grains ; ext: hyoscyami, 10 grains, made into six pills ; two to be taken at bedtime.

If the swallowing of a pill be difficult, as is sometimes the case, and causes distress, then the tincture of lactucarium may be substituted for the extract, thus : ℞ Tinct: of lactucarium, one drachm cherry laurel water, 30 drops ; water, one ounce, to be taken either alone or with the addition of a drachm of the tincture of hyoscyamus to each draught. As aperients (under which head I include cathartic medicines generally), there are three from whose use assistance will be derived, which are fully sufficient to meet the requirements of almost every case. These are the compound powder of jalap, the compound colocynth pill, and the compound rhubarb and aloetic pill. Of the three, that which is to be preferred in these cases is the compound powder of jalap, its action rendering it peculiarly adapted to the end of reducing the quantity of the circulating fluid, by withdrawing the serum from the blood, at the same time that, by its direct action, it removes fœculent accumulation from every portion of the intestinal tract. Aperients, however, and more especially purgatives, are not to be resorted to without sufficient reason, or to be employed merely because the habits of the individual as to regularity and frequency in action of the bowels have become altered by the change, and reduction in food, and by the quietude of position, for the usual excitants to peristaltic action, viz., the undigested particles of the food, together with that arising from the motion of the body, both, it must be recollected have been suddenly removed. The irritating of the intestinal canal, and stimulating it to expel what is not in it, is most objectionable, and whilst distressing to the patient, hastens the circulation, and interrupts the perfect repose so essential to cure. Obstinate constipation, on the other hand, however, must not be permitted, or anything that can produce straining, and the instant that such is perceived, lavements of tepid water should be resorted to to clear away any hardened lumps that may chance to occupy the rectum; whilst gentle hand rubbing should be employed to forward the contents of the large intestine. In cases where the colon is pressed by the aneurismal sac, and constipation mechanically produced, as a slight acceleration of the intestinal action, about two grains of the compound rhubarb pill taken occasionally just before the dinner meal, will be found useful, and to act well. Gentle manipulation may also be resorted to. Occasionally the secretion of urine, in consequence of the reduction in the quantity of fluid, will be very limited in quantity, so much so, indeed, as to leave it highly charged with salts, and induce scalding of the urethra in micturition. Here ten grains of the bicarbonate of potash, dissolved in a table spoonful of cold water, may be given with a very good effect at intervals. The principal symptom, however, that we are called upon to meet during the treatment, is that of pain, and from this we have more to contend against than aught else. Here we must resort to narcotics, using them freely both internally and externally, and to such extent as to dull and deaden the agony under which the patient occasionally suffers. For this purpose opium must be resorted to in its various forms, and of every preparation that which is to be preferred is the black drop, proportioning the dose to the urgency of the case.

If black drop cannot be procured, then Batley's sedative liquor, given in combination with the tartrate of antimony, may be usefully employed in such proportions as the following, viz.: ℞ Liqr: opii sedativi. 25 drops; liqr: ammon: acet: half a drachm; liqr: ant: tartarizat, 20 drops; water, one ounce. In one instance the smoking of twenty grains of stramonium at bedtime was found to produce a quiet night. This was in a case when the real nature of the disease had been overlooked, and the use of stramonium had been prescribed, and its habit acquired, with a view to the relief of the symptoms, which were supposed to be of asthmatic origin. Its effects, however, had been such as to afford relief, and the result may be borne in mind for trial in cases where other narcotics fail. The use of issues, which, when inserted upon either side of the spine, give, upon their discharging in cases of thoracic and abdominal aneurism, such vast relief, cannot be resorted to here, as their pressure would interfere with the recumbent position, and also necessitate the movement of the patient for their dressing.* Instead of these, belladonna may be employed, and a large plaster of this sedative spread upon very soft and thick chamois leather, applied evenly over the surface of the back, its centre corresponding to the seat of severest pain. With reference to issues, however, if they should have been adopted in any case, it must be borne in mind that the physical and stethoscopic phenomena consequent upon internal aneurism have frequently disappeared upon the creation of an issue, and the establishment of a free discharge, and there has been relief from pain, and absence of the bruit, stridor, or dysphagia previously existing. This has often occurred, and may do so again, thus causing doubt in the mind of the practitioner as to the correctness of his diagnosis, and a disbelief that the case has been one of aneurism at all. Subsequent return of these symptoms, however, will ultimately dispel the illusion.

Relief to the dorsal pain will sometimes be given by change of position, such as turning round and lying upon his face, whilst occasionally the application of a heated smoothing iron, applied over folded brown paper laid against the painful portion of the spine, will remove for a while the boring sensation under which the patient suffers.

Camphor, æther, and black drop in combination having been tried and failed, chloroform by inhalation may be used, whilst if nausea and vomiting set in, as it sometimes will, a draught containing two drops of creosote, with a grain of quinine, will be given with advantage.

There is another medicine that may be used with much benefit—that is iron—in anœmic cases. Of the iodide of potassium, given in doses at first of 5 grains three times a-day, and gradually increased, I have not had sufficient experience to enable me to offer any decided opinion as to its efficacy in hastening the consolidation of the contents of the sac. The only objection that appears likely to arise from its use is the creation of thirst. Medicines, however, in the treatment of retardation are to be regarded only as adjuvants. The steady adherence to restriction in diet and long-continued recumbence are the main points upon which reliance must be placed; and if these be rigidly and confidently adhered to and perseveringly employed (pain from the erosion of the spinal column, and other causes being manfully and cheerfully borne) until, from solidification of the contents of the sac, it shall cease to arise, it will be found that internal aneurism is not the hopeless affection which it has hitherto been regarded.

The success which has attended upon the treatment of internal aneurism by "retardation," as here laid down, has but to be confirmed by the repetition of a few more cases to ensure for it a practice and confidence as general as that which has at length universally been yielded to the treatment of external aneurism by compression. The validity of the latter, at its first introduction, would hardly be credited by many. They had been taught differently as students, and, as practitioners, could not bring themselves to believe that the mere imposition of a weight, or the placing of the point of the finger upon the femoral artery at the groin for a few hours each day, could by any possibility be sufficient for the cure of a disease which they had seen met only by an operation that ensured the theatre's being crowded by pupils, and the table surrounded by surgeons. The admission into hospital of a patient with external aneurism was, in their days, an event that produced excitement amongst the class. It is now comparatively disregarded, because the treatment is simple and gradual, and unaccompanied by *éclat* to the surgeon.*

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* Another mode by which relief to this pain may be afforded is to place the individual fully under the influence of chloroform, and then blister the most sensitive spot on the back with an heated iron spoon, subsequently dressing the vesicated portion with the muriate of morphia in doses of a grain at each application.

ON THE DIRECT VOLUMETRIC DETERMINATION OF URIC ACID IN URINE.

By F. S. B. F. De Chaumont, M.D., F.R.C.S.E., Staff Assist.-Surgeon.

The difficulties attending the usual method of determining the amount of uric acid are known to every one, and a simpler method has long been a desideratum. The object of the present paper is to describe a process which seems to offer results equally trustworthy with the ordinary method, and which is at the same time much more easy and rapid. It is founded on the fact of the decolorisation of solution of iodine by uric acid. That urine had this property was known some years ago, as it is mentioned by Terreil in the "Gazette de Hôpitaux" for 1858, where he attributes the change to urate of ammonia. Kletzinsky (1859) attributed it to the extractives, and stated distinctly that neither urea, uric acids, nor the salts effected the change; when some months ago Trousseau and Dumontpallier announced the re-action as due to glucosic urine, the observations of Terreil and Kletzinsky appear to have been forgotten. Trousseau, however, although supported by Mauvezin and some other observers, was soon obliged to confess that he had been misled. Farge d'Angers opposed his view among the first, and attributed the re-action to uric acid and sulphate of potash. Corvisart said that uric acid caused the decolorisation, but that that did not disprove the similar action of glucose. Scharf showed it to be due to uric acid and urates, as it took place to the greatest extent in febrile urine. Other observers attributed it to urea. Dechambre and Delpech considered the re-action due to urate of ammonia chiefly, which salt they found acted more rapidly than urate of soda, while the latter acted more rapidly than uric acid alone. Urate of potash they found acted much less rapidly. They further declared the decolorisation to take place with the following substances:—Sulphate of potash, bicarbonate of soda, chloride of ammonium, phosphate of soda, phosphate of ammonia, and benzoic acid. To these they added (as deduced from one experiment) kreatin and kreatinine.

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* Since writing the above, another case has come under my care, and is now under treatment in the Herbert Ward of the City of Dublin Hospital. The patient, a labouring man æt. 30, tall and well made, was admitted, upon the 14th of March, with an aneurism of the abdominal aorta, of the size of an ordinary potato, situated below and to the left of the ziphoid cartilage of the sternum. The history given by the sufferer was, that he had been always accustomed to work hard, and, for some years, to drink hard also, but not latterly,—that, towards the end of June 1863, he was employed, in a stooping position, piching up pipeclay from the hold of a ship, each lump of clay weighing about 44 lbs.; whilst doing so he experienced pain in his back, and as he was working at this time a good deal in the wet, he fancied that it might be rheumatism. He had to discontinue his labour and rest for a day or two: he then resumed it, and went to work at unloading iron. Shortly after, he was attacked by seminal emissions, which became very frequent. His whole system became irritable and restless, and he could not sleep at night; whilst the pain in the back grew so severe that he had to give up work altogether.

In January 1864 he experienced a rigor, and immediately afterwards noticed a "beating in his belly." This abdominal pulsation gradually increased until his admission into hospital, when it was clearly visible to the eye, presenting to the left of the mesial line, inclining to the cartilages of the ribs upon the same side. Its impulse was considerable, and accompanied by a bruit de soufflet which was plainly audible to the ear laid upon the abdomen (most lightly) when in the recumbent position, but, as usual, it was lost upon his standing erect.

The heart and its valves were sound, and no other aneurism was to be detected, but a tumour, apparently pancreatic, could be distinctly made out as existing in the abdomen a little below the aneurism proper. The pulse, after exercise, was, standing, 104, and, in the sitting position, 84. After rest it was, in the standing position, 96, sitting 80, and lying down only 76,—the difference between lying and standing being 20 beats per minute. The dorsal pain was very great. Treatment, as recommended above, was commenced upon the 23rd of March, and upon the 4th of April, the pain had so subsided as to be scarcely complained of. The appetite soon accommodated itself to the diminished quantity of food, and the patient is at this date, April 10th, progressing most favourably.

This case will be published hereafter, but in the meanwhile is open to the inspection of all interested in the question.

I have myself tried not only all the above, but also several other substances, of which the following is a complete list, with the results obtained in each case:—

Uric acid	Decolorises iodine with tolerable rapidity, either hot or cold.
Urate of ammonia	About the same as uric acid alone.
Urate of soda	Re-action produced more slowly.
Urate of potash	Re-action very slowly produced.
Glucose	No re-action.
Cane-sugar	ditto.
Latine	ditto.
Hippuric acid and hippurates	ditto.
Benzoic acid and benzoates	ditto.
Lactic acid (pure) and lactates	ditto.
Acetic acid (pure) and acetates	ditto.
Sulphate of soda	ditto.
„ potash	ditto.
Sulphuric acid	ditto.
Nitrate of potash	ditto.
„ soda	ditto.
Nitric acid	ditto.
Chloride of potassium	ditto.
„ sodium	ditto.
„ ammonium	ditto.
„ calcium	ditto.
„ zinc	ditto.
„ barium	ditto.
Hydrochloric acid	ditto.
Phosphate of soda	ditto.
„ ammonia	ditto.
Common vinegar	Slight re-action.
Impure lactic acid as obtained by merely filtering butter-milk ..	ditto.
Kreatinine (from two imperfect experiments)	Probable re-action.
Water, distilled or otherwise	Very slight re-action if the quantity be large.
All solutions with an alkaline re-action ..	Cause immediate decolorisation.

From the above list it will be seen, that of the substances likely to cause the re-action, there are present in ordinary acid or neutral urine only the uric acid and urates, and the kreatinine. The iodine process, uncorrected, always gives, if carried to its full extent, an excess over the ordinary method too large to be accounted for by mere loss in collecting and weighing, and due in all probability to the kreatinine. The correction to be applied will be described hereafter.

If a solution of pure uric acid be taken, of known strength, to which solution of starch has been added, and a standard solution of iodine be dropped into it, the blue colour will be found to become permanent only after a definite quantity has been added. This will be found to be in the ratio of *one* equivalent of uric acid to *four* equivalents of iodine, or 168 parts by weight of the former, to 508 parts by weight of the latter. With pure uric acid, or urate of ammonia, the reaction is complete in two or three hours; but with the other urates it takes very much longer. It is unfortunate that the most soluble urate, that of potash, is also the most intractable, taking nearly forty-eight hours before the decomposition is complete. The process is more rapid and satisfactory in natural urine than in the pure solution.

The solutions required for the analysis are the following:—

1. A standard solution of iodine. This is best made with distilled water and iodide of potassium, as being less liable to change than the alcoholic tincture. The solution I have used contains $\frac{1}{20}$ of an equivalent (= 6·35 grammes of iodine in the litre)* and this will decompose of—

Uric acid	2·1	grammes
Urate of ammonia	2·525	,,
Urate of potash	3·05	,,
Urate of soda	2·65	,,

One cubic centimetre will thus be equal to 0·0021 grammes of uric acid.

2. A standard solution of pure uric acid is made by dissolving 0·168 grammes in a litre of distilled water. Of this solution 12·5 cubic centimetres ought to decolorise completely 1 c.c. of the iodine solution.

3. A solution of starch should be made by digesting very pure starch (potato starch answers admirably) in a small quantity of cold water, and then pouring in boiling distilled water until the solution is complete. It is then to be filtered first through a clean rag, and then through filtering paper. It will then be perfectly clear and highly sensitive. I am thus particular in indicating the preparation of the starch solution, as I think its importance has hitherto been overlooked. In my earlier experiments I obtained embarassing and discrepant results from using solutions prepared without filtering, and in which there were undissolved grains suspended. If an actual *precipitate* of iodide of starch is allowed to form, it takes very much longer to effect the decolorisation. By using the solution prepared as above an extremely delicate reaction is obtained without positive precipitate.

The solution being thus prepared the method of analysis is as follows:—10 c.c. of urine (which must be acid or neutral, or if alkaline, previously neutralised) are measured from a burette into a beaker, and diluted to about 50 c.c. with distilled water, some of the starch water is added, and the iodine solution dropped in from a burette graduated to $\frac{1}{10}$ c.c. It is well to have two or three operations going on at once, of which the mean may be taken. The iodine must be added in quantities of not more than $\frac{1}{10}$ c.c. at a time, and the blue colour must be allowed to disappear before more is added. Usually speaking it will take about twenty-four hours before the operation is quite finished.

A source of fallacy, however, presents itself here, which gave me some trouble at first, although the fact appears to have been long ago pointed out by Magendie. It is that starch is converted into glucose by urine with remarkable rapidity, and even in the cold. This takes place, according to Magendie, in most of the fluids of the animal economy. It is, therefore, necessary to add more starch every now and then, if the iodine does not strike a blue colour on being first dropped in. This is doubly necessary because water alone will convert iodine into hydriodic acid to a small extent, if there be no starch present to arrest it. And this is a further reason for the purity and freshness of the starch solution, in order to ensure a delicate and immediate reaction. The action of water may be demonstrated by diluting largely some iodide of starch solution, when a point will be arrived at where the colour entirely disappears. This is equal to 0·4 c.c. of the above standard solution of iodine for every litre of water.

* This happened to be the solution already in use in the laboratory at the Royal Victoria Hospital at Netley for other purposes, and I adopted it to save the trouble of having two of different strengths.

The operation then being completed, viz., when the blue colour is permanent, the number of cubic centimetres of iodine solution used is read off, and multiplied by 0·21, the product will be the amount of uric acid in grammes per litre. Let us suppose 10 c.c. of urine took 2·8 c.c. of iodine solution, then, as each c.c. of iodine = 0·0021 grammes of uric acid, 2·8 × 0·0021 = 0·00588, the quantity in 10 c.c. of urine, or 0·588 in a litre. This result is obtained directly by striking off two cyphers from the co-efficient, and multiplying the number of c.c. used by 0·21, thus:—

2·8 × 0·21 = 0·588.

The following are the results of twelve analyses, compared with the actual weight obtained by the ordinary process with hydrochloric acid.

No.	Determined by Iodine.	Weight obtained.	Difference.
	Grammes per litre.	Grammes per litre.	Grammes.
1	0·5816	0·6070	−0·0254
2	0·7516	0·6510	+0·1006
3	0·5240	0·5376	−0·0136
4	0·7068	0·6510	+0·0558
5	0·6930	0·6720	+0·0210
6	0·4200	0·2875	+0·1325
7	0·7350	0·6321	+0·1029
8	0·6210	0·4925	+0·1285
9	0·7683	0·6130	+0·1553
10	0·5124	0·4563	+0·0561
11	0·6720	0·5640	+0·1080
12	0·4200	0·3005	+0·1195
Average	0·6171	0·5387	+0·0784 or about 14·5 per cent.

This difference is considerable, and more than could be accounted for by loss in the weighing process alone. Two experiments (imperfect as I before stated) seemed to show that part of this excess was due to the action of kreatinine, and to provide an adequate correction the following processes were employed:—

1. The baryta solution used in Liebig's process for urea was added to the urine to throw down, along with the other salts, all the soluble urates. The whole was filtered, the filtrate neutralised with pure acetic acid, and then tested with iodine as before, with the following results:—

No.	No. in the former List.	No. of c.c. of Iodine Sol. used for 10 c.c. of Urine.	No. of c.c. of Iod. Sol. after the addition of Baryta.	No. of c.c. Iod. Sol. corrected for 10 c.c.	Uric Acid calculated from Iodine corrected.	Uric Acid. Weight obtained.	Difference.
1	8	2·957	0·425	2·532	0·5317	0·4925	+0·0392
2	9	3·658	0·228	3·430	0·7203	0·6130	+0·1073
3	10	2·440	0·428	2·012	0·4284	0·4563	−0·0279
4	11	3·200	0·300	2·900	0·6090	0·5640	+0·0450
5	12	2·000	0·200	1·800	0·3780	0·3005	+0·0775
Average	..	2·851	0·316	2·534	0·5324	0·4842	+0·0482 or about 10 per cent.

2. In some more experiments nitrate of silver was used to throw down the urates, the excess was precipitated with chloride of sodium, and the filtrate tested with iodine as before. The following are the results:—

No.	No. in 1st Table.	No. in 2nd Table.	No. of c.c. of Iod. Sol. used for 10 c.c. of Urine.	No. of c.c. Iod. Sol. after the addition of Silver.	No. of c.c. Iod. Sol. corrected for 10 c.c.	Uric Acid calculated from Iodine, corrected.	Uric Acid, by Weight, obtained.	Difference.
1	8	1	2·957	0·300	2·659	0·5580	0·4925	+0·0655
2	9	2	3·658	0·368	3·290	0·6909	0·6130	+0·0779
3	10	3	2·440	0·350	2·090	0·4389	0·4563	−0·0174
Average	..	..	3·018	0·339	2·679	0·5626	0·5206	+0·0420 or about 9 per cent.

Mean of five experiments corrected with baryta .. .. .. } + 0·0482 difference.
Mean of three experiments corrected with silver .. .. } + 0·0420 difference.

$$0·0482 \times 5 = 0·2410$$
$$0·0420 \times 3 = 0·1260$$
$$8)\ 0·3670$$

Mean difference = 0·04525 = about 9 per cent.

This excess is not more than what might be expected, considering the inevitable loss in the weighing process, and the impossibility of precipitating out all the uric acid.*

Although to obtain an accurate determination the process ought to be continued for twenty-four hours, and the correction by baryta or silver applied, yet I think that for ordinary clinical purposes a very satisfactory result will be obtained by stopping it after the colour has remained permanent for an hour or an hour and a-half, care being taken to add sufficient starch to obviate the fallacy arising from its conversion into sugar. The uric acid may then be calculated out from the gross amount of c.c. of iodine solution without applying any correction, the amount of additional decolorisation, seldom exceeding ten per cent., that would take place after an hour and a-half, pretty nearly balancing the correction that would have to be applied, were the operation allowed to proceed to the end.

It will, I think, be hardly necessary to point out the advantages of this process over the ordinary ones, even if required to be extended to twenty-four hours, while the shorter approximate analysis is immeasurably superior, both in simplicity and accuracy, to the only other with which I am acquainted, namely, that deduced by taking a proportion of the result of the reaction of permanganate of potash upon the urine in bulk.

My experiments have not as yet been sufficiently extended to admit of my stating authoritatively what the decomposition is that takes place, but I can indicate what I conceive it to be from theory, and partially from experiments. The following are the theoretical changes:—

$$\underbrace{C_{10}N_4H_4O_6}_{\substack{\text{Uric acid}\\ \text{1 equivalent.}}} + \underbrace{8HO}_{\substack{\text{Water.}\\ \text{8 equivalents.}}} + \underbrace{I_4}_{\substack{\text{Iodine}\\ \text{4 equivalents.}}} =$$

$$\underbrace{2(C_2N_2H_4O_2)}_{\text{Urea 2 equivalents.}} + \underbrace{4HI}_{\substack{\text{Hydriodic acid}\\ \text{4 equivalents.}}} + \underbrace{4CO_2}_{\substack{\text{Carbonic acid}\\ \text{4 equivalents.}}} + \underbrace{2CO}_{\substack{\text{Carbonic oxide}\\ \text{2 equivalents.}}}$$

Part of the hydriodic acid probably unites with the urea.

The following three experiments support to a certain extent the above view. Three separate portions of uric acid were mixed with iodine in the proportions of one equivalent to four, and heated with distilled water in a flask.

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* I tried another process, using chloride of barium as the correction, but as this gave, when compared with the weighed acid, a difference of −0·070, or about 22 per cent. less than the result by the baryta or silver processes, I abandoned it.

In the first two cases a large quantity of gas passed over, but it was not measured. The presence of carbonic acid in large quantity was however determined. In the third case a part of the gas was measured, after which an accident to the apparatus prevented the measurement of the remainder. The portion collected amounted to 14·7 cubic inches, of which 10·1 inches proved to be carbonic acid, the remainder, 4·6, being probably carbonic oxide. Had the whole been obtained, I had calculated on getting 39 inches of gas of which 28 carbonic acid, and 11 carbonic oxide. The proportion of 28 to 11 is in per-centage as 74·3 to 25·7 = 100. The proportion of 10·1 to 4·6, the quantity actually measured, is in per-centage as 68·7 to 31·3 = 100. To ascertain the presence of urea the hydriodic acid was removed by means of nitrate of silver, and the whole filtered. The filtrate was then tested by Liebig's process with pernitrate of mercury. In the following Table the amount of urea derived from the theoretical calculation is placed side by side with the results obtained by experiment:—

No. of Experiment.	Urea as calculated theoretically (in grammes).	Urea actually found by Liebig's process. (in grammes).	Remarks.
1	0·04800	0·05725	Difference + 0·00925
2	0·59280	0·53730	„ − 0·05550
3	1·20000	1·14080	„ − 0·05920

Royal Victoria Hospital, Netley, December, 1863.

EXTRACTS FROM THE ANNUAL REPORT AND RETURN OF SICK TREATED IN THE LUNATIC HOSPITAL, FORT PITT,

From the 1st of January to the 31st December, 1862.

By Staff-Surgeon Luke Barron, M.D.

"The anticipation expressed in last year's Report respecting the total number of admissions during the previous twelve months being likely to prove the average for the future, have not been borne out by the event. The decrease in the past year has been considerable, and affects almost all the types of mental disease recorded, but it is most noticeable in those of 'Mania' and 'Fatuitas.' This diminution, extending to nearly one-half of the latter form of disability in men discharged from the service, it is to be hoped, may be accepted as an evidence of the greater care bestowed upon the examination of recruits on the point of intellectual capacity. The increase in the numbers treated in this hospital had gone on steadily for several years, from causes which were indicated in my last Report, and though then supposed to have probably attained its highest point, no such reduction in the numbers as has occurred was foreseen. The fact is, no doubt, referrible to an improvement in the class of recruits, to the total cessation of active warfare and consequent climatic influences in India and China, possibly also to some reduction in the numerical strength of the army, and to other causes of a less important or accidental character, which need scarcely be noticed. It will, however, be seen by the Tables which accompany this Report, that the reduction occurs more especially in the invalids from India and the home stations."

"There has been no epidemic or common cause of serious disease during the period to which this Report refers. A very transitory outbreak of Diarrhœa showed itself on one occasion during the summer amongst both the patients and attendants here, and was also prevalent at the same time in the same classes in the general hospital at Fort Pitt. It was not traceable positively to any specific cause, but the vegetables which were bad for a few days at the period, had probably something to do with this attack. Altogether the sanitary condition of this establishment during the past year has been satisfactory. When referring to the subject of the physical health of the patients here, I am led to notice the great difficulty which often exists in obtaining from lunatics themselves any information or complaint respecting their sufferings. Either from intensity of thought or other and all absorbing subjects, defect of nervous sympathy, weakened attention, or inertia, they are, as a rule, peculiarly indifferent to the presence of grave physical lesions, discomfort, and pain, as well as forgetful of the calls of nature, and unaffected by the offensive consequences to which such inattention leads. It is also very noticeable how seldom some patients, known to be the subjects of advanced tubercular disease of the lungs, are heard to cough, or seen to expectorate. From some cause, there is a well marked modification of bodily disorders in these men, which has probably given rise to the remark that lunatics are not insane alone in the site of the intellect, the brain, but in all their organs. Many other difficulties constantly present themselves in the examination for physical lesions of insane soldiers, and which materially interfere with such a proceeding, and call for tact and management; such for instance, as their misstatements, suspicions, unwillingness to comply with directions given to them, absolute silence, gesticulation, noisiness and occasionally dangerous violence. The most especial vigilance on the part of the medical officer and attendants is consequently requisite in dealing with this class of men, and from these circumstances also arises the great advantage, which medical men accustomed to deal with lunatics possess over others not so habituated, even in the treatment of their purely bodily diseases. The assertion of some writers that Anæsthesia of the cutaneous surface is the common condition of persons labouring under aberration of intellect has not been confirmed by the experience of this hospital. Though bearing without a murmur the sufferings attending such ailments as those above enumerated, I have scarcely met with a man who has shown himself insensible to pain, when such has been produced by treatment or accidental circumstances. The really complaining persons, however, are the hypochondriacs, and it is worthy of remark, that when these persons also labour under some bodily ailment, their anxieties and attention are almost invariably concentrated on their fancied to the total neglect of their real disorders. On the other hand, the supervention of some physical disease in a man labouring under insanity has been noticed to have a favourable effect upon his co-existing mental affection, probably by weaning him from brooding over his illusory conceptions. In one instance, during the past year, this was the well marked result in a man labouring under 'Monomania,' who recovered here, his restoration to reason coinciding with the advent of Ascites and Anasarca."

"Proceeding now to the consideration of the various Tables, I wish in the first place to point out that some modification in those heretofore furnished, has been adopted, and some additional information is given this year. The full details respecting the peculiarities of the malformations of the crania are given in Tables 10 and 11.

The object last year was to show the specific grounds on which these Tables were then, and for the future would be formed, and to offer, if necessary, proof that no exaggeration in the deductions come to really existed. The other Tables have been added in the hope that they may elucidate some matters deserving notice, but much of this information is offered, and must be received with a degree of doubt as to its value for statistical purposes. The antecedents of soldiers are frequently very little known, and they themselves are often the only persons who could throw light upon their personal or family history. In the case of lunatic patients, they are called upon for this information at a period when their statements would be, as a rule, utterly undeserving of credit. Still, all the information obtainable has been collected from the abstracts of cases furnished, from the men themselves, and occasionally from their friends who either visit them here or write about them.

Table No. 1 shows that the total of all classes of disease admitted during the present year has been 214, whilst the previous year the numbers were 289. The most noticeable diminution occurs as before stated in the various forms of "Mania," which have been only 75 as compared with 111, and in the cases of "Fatuitas," which show 32 admissions in lieu of 56 in the previous twelve months. The variation in the other types of mental disease is not so important as to require comment. Having in former Reports entered upon a description of the various forms of insanity recognized in the list of diseases in the Medical Regulations, I purpose omitting all details on this head, with the exception of a few remarks upon a case of general Paralysis which appears in this Return. Though recognized by many alienist writers as a distinct form of mental disease, there can be no difficulty in classing it in our returns under the phase of insanity, by which it is characterized at the time. The deviation from soundness of mind may in the first stage be but slight, and as the disease progresses this state is usually followed by the more striking evidences of delusive insanity and then by gradual impairment extending to complete obliteration of the intellectual faculties, in which stage the patient appears to have but an animal or vegetative existence, requiring everything to be done for him, even to the pushing of his food into the back of the mouth to induce an effort at swallowing. The disease may therefore be placed under the head of Monomania, acute and chronic Mania, and finally Dementia. Had the term "Amentia" been in use, it might be much more appropriately applied to this stage of complete dementia than in the sense in which it has been heretofore used, for at this final stage the patient's intellect is to all intents annihilated. In the case recorded here the affection is passing from the condition of mania into that of dementia. In this patient there is the surprised or expectant expression, staggering, straddling gait, marked more by a want of co-ordination of the muscular movements than actual loss of muscular power, noticeable in the upper as well as in the lower extremities, thick, indistinct, and often very hesitating utterance, tremors of the lips when speaking and vermicular tremor of the muscles of the tongue, which is always put out with some difficulty, and cannot be kept long so protruded. In this case there was no unequal dilation of the pupils, so common in this affection. His delusions were of an exalted type, running principally upon the subject of his great wealth ("Manie des richesses"), and he had that sense of well-being which is so generally present in these patients. His memory was very faulty, and his intelligential faculties generally were impaired. He has had two convulsive fits during his residence here, which were followed by increased confusion of ideas and difficulty of articulation. There will, probably, be a recurrence of these seizures, and his mental impairment and paralytic symptoms will, doubtless, progress together until the disease proves fatal. In the case of Cephalæa there was no disorder of the mind, and the man should not have been sent here. The cases under the head of "No Mental Disease Apparent" include soldiers, who have arrived here from some one of our colonies, and recovered on the voyage home, men whose supposed mental incapacity was found, after prolonged observation here, not to be disqualifying, or men who returned from Bow Asylum recovered."

"Table No. 2 specifies, as nearly as the medical histories of the patients and other sources of information furnished show, the supposed causes of insanity. Hereditary and congenital origin stand foremost, but should give a higher figure, as most probably a good proportion of the "Unknown" belong to this category. The effects of climate show a diminution, as compared with former years, as might be supposed from the cessation of active field-service in India and China. On the other hand, it is probable that "syphilitic and mercurial taint," as causes, are understated. The return under "intemperance" is unusually large, and is probably over estimated. I remarked, on a previous occasion, that intemperance is often rather the result than the cause of insanity. The first stage of unsoundness of mind, a period of alteration of character, more than positive aberration, is very likely, in soldiers, to escape notice, and the features of drunkenness in such men, are certain to present a very exaggerated appearance. Their great susceptibilities of excitement and absence of self controul naturally lead to the belief in inordinate indulgence in spirituous liquors, where it is really but extreme excitement from not very large potations.

Still, unquestionably soldiers do drink a good deal, especially in hot climates, and such indulgence must be a fertile source of insanity.

"Two cases are referred to masturbation, and appeared fairly attributable to such cause. This, however, must not be accepted as the measure of such evil practice in this asylum. The propensity to this and other degrading habits has to be constantly guarded against here. The other specified causes require no comment. The admissions during the months of May and July were unusually large, and the average daily residents throughout the year have been proportionately numerous, as will be seen by Tables 3 and 4. The relative decrease of patients from the various stations is most marked in those from India and China, as before stated, and as shown in Table 5. The suicidal and homicidal patients are about the usual average. These men are always a source of much watching and anxiety. With respect to artificial feeding, I may remark that men generally succumb to this process after a few day's resistance. There are two ways in which feeding is usually effected, one by the Œsophagus tube, and the other by a spoon, and a perforated piece of wood introduced into the mouth. The latter is the mode of proceeding adopted here. Seclusion has been had recourse to in moderation, and only when necessary. The greater part of the periods of seclusion stated in Table 6 was incurred in the case of a man who believed that he had orders to destroy the world, and daily smashed everything that came within his reach. No mechanical restraint is used in this hospital. A belt for restraining lunatic patients, which was sent here for trial, was put on a violent lunatic during his transit from Fort Pitt to Bow Asylum, and answered the purpose intended."

"I may remark, that a good many men arrive here, more especially from distant colonies, labouring under scurvy, and though it is very probable that a few of these men were placed on board in a scorbutic condition, it is believed that a more liberal supply of fresh meat, vegetables, &c., during the voyage to this country would nearly get rid of, and certainly should prevent the occurrence of such a disease, depending, as it does, mainly, if not altogether, upon diet. With respect to the result of treatment as shown in Table 9, it is necessary to explain that it does not refer alone to the events of this hospital. Much of the amelioration in the condition and the recovery of most of the patients has occurred prior to their arrival at Fort Pitt. Their residence here is far too short to expect much from their management or treatment, but generally some, often considerable, improvement takes place, and we have had several positive recoveries.

The cases in which want of symmetry or defective development of the cranium exists, as given in Table 7, are very numerous this year, more especially the former malformation. In last year's return the per centage was about 20, this year 34 per cent. Every man's head has been measured on admission here during the past year, and a Table of the dimensions and all peculiarities is kept, from which the information in Table 8 is derived. The cranial measurements are circumferential, transverse, and antero-posterior over the arch of the cranium. The three measurements do not always correspond. The height of the man is also taken, and the largest heads and greatest height are not always found together. It indeed strangely happens that the largest head was found to exist in the shortest man. His height was 5 feet 3 inches—cranial measurement, circumference 25 inches—antero-posterior and transverse each 15½ inches."

"Little need be said respecting the treatment employed in this establishment. The remedial measures are those pointed out in previous Reports, and consist most especially in those of a moral character. The amount of medicine consumed is trifling. The diet is liberal, as is customary in all well managed asylums, and there are not many cases where it has appeared at all desirable to reduce the scale."

TABLE NO. I.

Showing the Admissions and Discharges during the past Year.

Diseases.	Remained, 31st Dec., 1861.	Since admitted.	Total treated.	Discharged to Friends.	Duty.	Bow Asylum.	Fisherton House Asylum.	St. Mary's, to await discharge invalided	Parish Authorities.	Surgical Division.	Regimental Hospital.	Total discharged.	Died.	Remained, 31st Dec., 1862.
Mania Chronica ..	12	54	66	29	..	30	1	..	..	..	1	61	..	5
„ Intermittens	..	4	4	3	1	..	..	..	..	..	..	4	..	..
Monomania ..	1	17	18	13	1	1	..	1	..	..	..	16	..	2
Melancholia ..	2	20	22	12	..	8	..	..	..	..	..	20	..	2
Dementia ..	4	57	61	41	1	10	..	3	1	..	..	56	1	4
Mania Chronica et Paralysis	..	1	1	1	..	..	..	..	..	..	..	1	..	..
Mania Chronica et Epilepsia	..	1	1	1	..	..	..	..	..	..	..	1	..	..
Dementia et Paralysis	..	5	5	3	..	2	..	..	..	..	..	5	..	..
Dementia et Paralysis (genl.)	..	1	1	..	..	..	..	..	..	..	..	..	..	1
Dementia et Epilepsia	..	4	4	1	..	3	..	..	..	..	..	4	..	..
Cephalœa ..	..	1	1	1	..	..	..	..	..	..	..	1	..	..
Fatuitas	3	32	35	25	1	..	..	9	..	..	..	35	..	..
No mental disease apparent	2	17	19	6	8	..	..	3	..	2	..	19	..	..
Total ..	24	214	238	136	12	54	1	16	1	2	1	223	1	14

TABLE NO. II.

Showing Supposed Causes of Insanity.

Hereditary or Congenital Origin.	Injury to Head.	Moral.	Physical.	Sunstroke.	Fever and Climate.	Syphilitic and Mercurial Taint.	Induced or Aggravated by Intemperance.	Attributed to Masturbation.	Predisposition.	Predisposition, but Developed by Tropical Climate.	Unknown.
42	9	19	17	6	22	1	21	2	17	11	47

TABLE No. III.

Showing the Admissions during each Month.

January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
11	7	9	18	52	22	38	9	8	26	8	6	214

TABLE No. IV.

Showing the Average Daily Resident during each Month.

January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
20	14	12	17	29	47	38	35	19	27	24	18

TABLE No. V.

Showing where Patients Attacked.

Great Britain, or otherwise unknown.	Mediterranean.	East Indies.	West Indies.	China.	Ceylon.	Mauritius.	St. Helena.	New Zealand.	Cape of Good Hope.	Canada.	Gold Coast.	Channel Islands.	Total.
106	18	69	2	1	2	2	1	2	4	4	1	2	214

TABLE No. VI.

Showing Number of Patients in Seclusion.

Number of Patients.	Aggregate number of Hours.	Average number of Hours.	Remarks.
21	213	$10\frac{6}{60}$	

TABLE No. VII.

Showing Cases in which either Want of Symmetry or Defective Development of the Cranium existed.

Want of Symmetry.	Defective or Low Development.	Total.
74	31	105

TABLE No. VIII.

Showing the Result of Measurements of the Heads of Patients.

Largest Measurements.			Smallest Measurements.			Maximum Height.	Minimum Height.
Longitudinal.	Transverse.	Spherical.	Longitudinal.	Transverse.	Spherical.		
15½ in.	15½ in.	25 in.	12½ in.	13 in.	20 in.	5 ft. 11½ in	5 ft. 3 in.

TABLE No. IX.

Showing Result of Treatment for Mental Ailments.

Discharged			Died.	Remain			Remarks.
Recovered.	Improved.	Unimproved.		Recovered.	Improved.	Unimproved.	
23	63	137	1	..	5	9	Vide Report.

TABLE No X.

Showing Patients in whom want of Symmetry between the Sides of the Head existed.

Regiment.	Name.	Remarks.
6th Drags.	Charles Stevens ..	Cranium unsymmetrical; left side flattened.
5th Lancers	William Scott ..	Cranium unsymmetrical; right side flattened; low, wedge-shaped. Best seen from behind.
R. A.	Daniel Kean.. ..	Cranial development low and slightly unsymmetrical.
2 | 20th	Thomas Hartigan..	Cranium not symmetrical; left side flattened. Face also unsymmetrical. Right ear lower than left.
97th	John Conroy ..	Configuration of cranium not symmetrical.
6 Dr. Gds.	John Bourke ..	Cranium unsymmetrical; not fully developed; forehead flat and receding. Right ear half an inch lower than left.
2 | 3rd	Joseph Taylor ..	Cranium not symmetrical; left side flattened.
R. N. Co's	Alex. McGill ..	Cranium unsymmetrical; right side flattened. Best seen from behind.
94th	James Coolahan ..	Cranial development low and unsymmetrical; left side flattened. Seen both before and behind. Spherical measurement 20 inches.

Table No. X.—*continued.*

Regiment.	Name.	Remarks.
S. F. Gds.	Edward Trayner	Cranium unsymmetrical; badly developed; right side flattened.
88th	Owen Geraghty	Cranium large and not symmetrical; flattened on right side.
34th	William Reid	Cranium unsymmetrical; forehead low and narrow.
73rd	Charles Ford	Configuration of cranium not symmetrical; right side flattened, left bulging. Best seen from behind.
1 | 60th	George Stone	Cranium unsymmetrical; forehead low and narrow.
1 | 60th	William Davidson	Cranium not symmetrical; right side flattened, left bulging; development full. Best seen from behind.
1 | 5th	Charles Kedge	Cranium unsymmetrical; bulging towards right side; narrow. Right ear lower than left.
53rd	William Williams	Cranium slightly unsymmetrical; left side flattened. Best seen from behind.
1 | 10th	George Lockhart	Cranium unsymmetrical and conical; left side flattened materially. Transverse measurement small, 13 inches. Patient's height $5\frac{9}{12}$.
26th	Thomas Walker	Cranium not symmetrical; left side flattened, narrow and conical. Seen both from before and behind. Measurements small, 12½l, 13t, 20s.
10th Huss.	Adolphe Kuntze	Cranium unsymmetrical; head flattened at sides; forehead narrow and receding.
63rd	John Shields	Cranium unsymmetrical.
2 | 5th	Patrick Gaynor	Cranium not symmetrical; largely developed. Measurements 14¾ lateral, 15¼ trans., 23½ spher.
90th	George Ormond	Configuration of cranium not symmetrical.
46th	Patrick Maddigan	Cranium unsymmetrical and narrow.
R. A.	Patrick Ward	Cranium unsymmetrical, and otherwise not well developed.
1 | 12th	John Mackin	Cranium unsymmetrical and badly developed. Right ear and eye not symmetrically placed.
2 | 7th	Clement Osborne	Cranium not quite symmetrical. (Patient re-admitted from Bow Asylum.)
2 | 22nd	John Lord	Cranium and face unsymmetrical. Left ear lower than right, and very prominent.
1 | 25th	Michael Conroy	Cranium not symmetrical.
G. G.	Isaac Bridges	Cranium unsymmetrical; bulging towards right side, narrow, and otherwise irregular in configuration.
R. E.	Alfred Brown	Cranium unsymmetrical.
2 | 8th	John McQueen	Cranium unsymmetrical, narrow, and lowly developed.
43rd	Peter Alley	Cranium not symmetrical.
109th	Auguste Kirschner	Cranium unsymmetrical; forehead very receding and flat; vertex also flattened and altogether defective.
2 | 60th	Fred. Maile	Cranium not symmetrical.
55th	John Macdonald	Cranium markedly unsymmetrical; flattened at right side. Best seen from behind.
R. A.	George Wadsworth	Cranium not perfectly symmetrical.
2 | 8th	Thomas Clarkson	Cranium unsymmetrical; left ear lower than right.
1 | 1st	John Harris	Cranium slightly unsymmetrical; left side flattened, and face considerably distorted.
96th	William Daynes	Cranium not symmetrical.
68th	John Bass, schoolmaster	Cranium not quite symmetrical; right side flattened. Right ear lower than left.
R. A.	James Innes	Cranium slightly unsymmetrical.

TABLE X.—*continued.*

Regiment.	Name.	Remarks.
35th	William Mayfield ..	Cranium unsymmetrical, conical and otherwise badly developed.
R. A.	John Connor.. ..	Cranium not quite symmetrical.
5th Lancers	James Kearney ..	Slight flattening of right side of cranium.
43rd	George Field.. ..	Cranium unsymmetrical; left side flattened.
2 | 4th	Charles Burton	Cranium slightly unsymmetrical; forehead very receding.
R. A.	William Bready ..	Cranial conformation not symmetrical, conical and otherwise defective.
70th	John Brennan ..	Cranium not quite symmetrical, conical; left side flattened.
97th	James Keough ..	Cranium slightly unsymmetrical.
97th	Peter Alwell.. ..	Cranium unsymmetrical; peculiarly formed; forehead very projecting.
1 | 24th	William Connor ..	Cranium not symmetrical; flattened on right side.
2nd Drag.	George Harris ..	Cranium unsymmetrical and wedge-shaped.
1 | 6th	Charles Naughton	Cranium very unsymmetrical; flattened on left side; congenital depression at junction of left frontal and parietal bones.
65th	James Joseph ..	Cranium unsymmetrical.
2 | 8th	James Williams ..	Configuration of cranium not symmetrical. Best seen from behind and above.
100th	Thomas Parkes ..	Cranium slightly unsymmetrical, most evident from behind. Left eye lower than right. Measurements large, 14¾l, 15¼t, 23½s.
27th	James Smith.. ..	Cranium unsymmetrical, conical, and elongated backwards.
C. M. R.	Robert Hodson ..	Cranium slightly unsymmetrical; left side flattened.
5th Lancers	Thomas Hammond.	Cranium unsymmetrical; bulging to right side.
2 | 25th	Richard Moss ..	Cranium abnormally large and not quite symmetrical. Measurements 15½ lat., 15½ trans., 25 sph. Height of patient 5ft. 3in. only.
50th	John Edwards ..	Cranium not symmetrical; bulging to right side.
99th	James Benning	Cranium unsymmetrical; very conical, pear shaped and altogether peculiar.
R. E.	Wm. Hen. Saunders	Cranium not symmetrical, conical; left side flattened.
Bom. Eng.	Serj. Chas. Devine.	Cranial configuration unsymmetrical; right side flattened.
6th Drag.	Arthur Burfoot ..	Cranial development not symmetrical and face the same.
77th	Thomas Arnold ..	Cranium unsymmetrical; badly developed and measurements small, 12¼l, 13t, 20⅛s in.
R. A.	Robert Fraser ..	Configuration of cranium not symmetrical; projects on right side. Left ear lower than right.
35th	Thomas McGrath..	Cranial development unsymmetrical and low.
91st	Richard Boardman.	Cranium unsymmetrical; considerable and uniform depression across vertex, behind union of frontal and parietal bones; congenital.
81st	Frederick Brasher..	Cranium not symmetrical; bulging to right side.
56th	Thomas Flood ..	Cranial conformation not quite symmetrical; left side flattened. Best seen from behind.
46th	Joseph Pickering ..	Cranium unsymmetrical; right side bulging, left flattened.
1 | 4th	John Kelly	Cranium not symmetrical; flattened at back and vertex.

Table No. XI.

Showing Patients in whom other Defective Development of the Cranium than the foregoing existed.

Regiment.	Name.	Remarks.
1 | 24th	Henry Nash	Cranium peculiarly formed, conical and forehead receding; measurements small, 13 lat., 13½ trans., 20¼ sph.
27th	John Raghilly	Cranial development bad; forehead receding; vertex narrow; measurements small, 12¾ lat., 13 trans., 21 sph.
2 | 15th	Richard Wilson	Cranium not highly developed; measurements small, 13 lat., 13¼ trans., 21¼ sph.
C. M. R.	James Connolly	Cranium peculiarly formed; wedge-shaped; measurements large.
84th	John Hart	Configuration of cranium peculiar and low; measurements small, 12 lat., 13 trans., 20 sph.
100th	Thomas Brew	Cranial development low; forehead very receding.
2 | 60th	Edwin Hughes	Measurements small, 12½ lat., 13 trans., 20 sph.
100th	John Adank	Cranium peculiarly formed; flattened at back, and square.
2 | 23rd	Robert Gething	Cranium narrow and conical.
26th	Malcolm Johnston	Forehead narrow and receding; measurements of head below average.
R. B.	Chisholm Ross	Conformation of cranium peculiar; flat at vertex, and elongated at back.
1 | 25th	George Seddon	Cranial development low; forehead narrow and very receding.
79th	Charles Fraser	Cranium elongated backwards.
109th	Henry Frengs	Cranial development faulty and low.
St. Helena	John Butler	Development bad; forehead low and narrow.
77th	Philip Reilly	Conformation of cranium peculiar; measurement small, 13 lat., 13¼ trans., 21 sph.
R. A.	Edward Flaherty	Formation of cranium indifferent.
69th	James Kalsey	Cranial development peculiar; elongated backwards.
46th	John Murphy	Cranium small posteriorly and flattened.
81 t	John Manley	Cranial development small, measurements 12½ lat., 13 trans., 20½ sph.
78th	Colin McHaffie	Cranium peculiarly formed, and conical.
88th	James Irons	Configuration of cranium peculiar; elongated backwards and forehead very receding.
1 | 21st	Henry Prentice	Measurements small, 13 lat., 13¼ trans., 23¾ sph.
34th	Michael Reilly	Cranium peculiar; flattened at vertex; forehead receding.
R. A.	Nicholas Cullen	Configuration of cranium peculiar; flat and elongated.
75th	David Coughly	Formation of cranium peculiar; flattened at vertex and narrow.
2 | 10th	Charles McCaffrey	Measurements small, 12¼ lat., 13 trans., 21 sph.
4th R. B.	William Oakley	Cranial development not good; measurements small, 13 lat., 13½ trans., 21 sph.
103rd	Michael Mansfield	Cranial development indifferent; vertex flat; forehead low and receding, Right ear pinched down at top.
1 | 5th	William Jones	Configuration of cranium peculiar; rather conical and flat posteriorly.
50th	John Flynn	Cranium narrow, wedge-shaped and conical; forehead narrow and low; ears very projecting and large.

HISTORY OF A CASE OF GUNSHOT WOUND OF THE LIVER WITH REMARKS.

By T. Longmore, Deputy Inspector-General, Professor of Military Surgery, Army Medical School, Netley.

The circumstances of military service, and, in consequence of them, the unavoidably frequent removals of the sick and wounded officers and soldiers from the charge of one surgeon to another, cause the duty of transmitting accurate, clear, concise yet complete, histories of the diseases or injuries such patients labour under, to be one of the most imperative of the many duties which devolve upon every Medical Officer. The importance of a conscientious discharge of this duty is obvious, and, indeed, frequently can scarcely be overrated, as regards the interests of the patients; attention to it is due from one Medical Officer to another, if merely the saving of each other's time is considered, for the task of unravelling the past histories of ailments from patients themselves is always a tedious process; and lastly, it is essential for preventing errors in diagnosis, which can scarcely be avoided when statements of the previous details of cases have to be obtained from unprofessional, and sometimes designing persons. But in the instances of *invalids*, where the amount of pension to be awarded may in a considerable degree depend upon a proper appreciation of the nature and origin of a soldier's disability, the duty is not merely one of professional concern, as regards the relations of patient and surgeon, or of Medical Officers among themselves, but is also one of material importance as regards a just and economical distribution of the funds of the country. Therefore the orders demanding the fullest attention to this subject have always been very stringent. To enforce the importance of this duty still further, I forward a report of the following case of gunshot wound of the abdomen, for it affords an illustration of the effects of these orders not being complied with. It is the only case of its kind, perhaps, which occurred during the Crimean campaign, yet it escaped record under its proper class and order in the surgical history of that war, in consequence of no account of the injury, in its early period of hospital treatment, having reached the Medical Officers of the Invaliding Establishment at Chatham.

The case is of considerable professional interest, independent of any advantage which may arise from quoting it as an example of the effect of omitting the transmission of complete reports on the cases of invalids in general, for it is one of an undoubted gunshot wound of the liver, with recovery. Moreover, I have had the opportunity of ascertaining some of the results of the wound after a lapse of several years from the date of its infliction, and these are instructive. The histories hitherto published of these wounds do not generally comprise periods of more than a few months after their infliction.

The following abstract report of the early history of the case was originally furnished by Dr. Dwyer, the surgeon of the regiment in which the soldier was serving when wounded, and by whom he was treated in his regimental hospital, to the late Director-General T. Alexander, when Principal Medical Officer of the Light Division in the Crimea. In all probability a copy of this report accompanied the man when he left his regimental hospital, though it subsequently miscarried:—

"Private Joseph Mansfield, 34th Regiment, was wounded on the 29th of April, 1855, by a musket ball, which entered about two inches to the right of the last dorsal vertebra, apparently passed directly through, and lodged under the integument in the right hypochondriac region, whence it was excised. Shortly after admission into hospital the abdomen became extremely tense, and tender on pressure. A warm water enema was administered, and calomel and opium prescribed. The enema seemed to allay the pain. The day but one after admission bile was observed escaping from the anterior wound, and it continued oozing from this aperture up to the 12th of May. After this date the wounds began to assume a healthy appearance, and the abdominal symptoms to abate; the patient gradually regained health, and, with the exception of a feeling of contraction in the muscles of the right side, both in the lumbar region and in the abdomen, he was in a favourable state of progress when he was invalided for change to Balaklava on the 7th of July, 1855."

Being interested in this patient's case, and with a view to discover how this instance of a wound of the liver, so clear in itself, escaped notice and record in the surgical history of the Crimean campaign, I made a search through the medical case books and invalid records at Fort Pitt, where I was aware the patient would most probably be received after reaching England from the Crimea. The result was at once instructive, in showing how errors in statistics may occur, unless checked, as previously observed, by the transmission of accurate documents. I found that Private Mansfield was admitted into hospital at Fort Pitt on the 17th of September, 1855, under "Observatio." The date he left Balaklava is not noted; but the respective entries show that he could only have remained there a very few days. The admitting Medical Officer, not having any documents to guide him, and evidently chiefly depending for information upon a superficial examination of the cicatrices of the wounds of entrance and exit, writes: "This patient received a ball on the 29th of April, which entered the chest immediately below the inferior angle of the scapula, passed through the lower part of the *right lung*, and was extracted from the inferior border of the ninth rib on the same night in the camp hospital. At present there is no inconvenience felt from the wound, except in the act of lifting with the right hand. General health good; strong constitution." The records show that Private Mansfield was reported to be well and discharged to duty on October the 2nd, 1855.

On the 1st of July, 1856, he was again sent as an invalid to Fort Pitt, not having been found fit for duty. He was now admitted under the heading of "Vulnus Sclopetarium," and the Medical Officer of the ward into which the patient was received, briefly registers his wound in the case-book as "*a wound of the back;* ball passing through the body."

The staff surgeon of the Surgical Division made a report on this occasion to the Principal Medical Officer as follows: "Private Mansfield, of the 34th Regiment, was wounded on the 29th of April, 1855. The bullet entered about a hand's breadth from the spine, over the false ribs, and made its exit in front, about eight inches from the place of entrance, *without apparently wounding the contents of either the abdomen or chest.* The man states he is desirous of joining his regiment. Fit for duty." He was again discharged to duty on the 29th of July, 1856.

The wound was now returned in the Tables of the Crimean war, as one of Class 4, Order 2, "*Wound of chest, without lesion of contents.*"

The wound could scarcely have been registered in its proper place without more authentic data than the staff surgeon had been furnished with. He might well have expected that the very rare occurrence of survival after so fatal an injury as a gunshot wound of the liver, would have had a full report with it; and, in the absence of such an account, without the usual signs of there having been a penetrating wound of the chest, and, with the man's declaration that he was able and willing to serve as a soldier, the classification noted was almost a certain consequence.

Private Mansfield remained with his regiment only a few months, was again found unfit for service, and, for the third time, on the 30th of December, 1856, was admitted as an invalid at Fort Pitt. A more accurate diagnosis is on this occasion entered in the case-book. After the usual headings, the report states: "He is a strong-looking man, of fair complexion, and states that on the 29th of April, 1855, when in the trenches before Sebastopol, he received a wound from a musket-ball. It entered the back on the right side of about the eighth dorsal vertebra, passed directly forwards, and lodged about three inches above, and about eight inches to the right of the umbilicus, a little below the cartilage of the ninth rib, where it was cut down upon, and extracted by the surgeon of the regiment. He was five months in his regimental hospital, and states, further, that the hæmorrhage from the wound was at first very considerable, and that, owing to the too speedy closure of the wound where the ball was extracted, an abscess formed and burst in the inside, and that its contents were discharged by stool. He appears, also, to have had acute catarrh shortly after the injury; but there are not now any indications, stethoscopic or otherwise, of pulmonary disease. Heart's action, normal. He has not done any regular duty since the date of his wound, in consequence of very severe pain being experienced in the hepatic region when a belt is attempted to be worn, or the pack is carried. He cannot lie for any length of time (say not more than twenty minutes) on the right side, without the accession of acute pain in the same locality. There is slight increase of hepatic dulness, except to the extent of about an inch and a-half around the wound, where there is if anything, tympanitis. There are the cicatrices of the wounds previously stated. General health, good."

"2nd January, 1857. Discharged to St. Mary's.

"E. McDowell, *Acting Assistant Surgeon.*"

Private Mansfield was finally discharged from the service as a pensioner on the 22nd of January, 1857.

I made further enquiries for the purpose of tracing the remote consequence of this man's wound; and, on the 25th June, 1861, Major Pattison, Staff Officer of Pensioners at Coventry, wrote to me as follows:—"Joseph Mansfield is an enrolled pensioner, and is at present out for twelve days' drill. As a means of livelihood he keeps a jobbing horse and cart." He was also kind enough to obtain for me the following report from Dr. Ogilvy, civil practitioner, in charge of the troops at Coventry:—"Joseph Mansfield is still unable to lie on his right side. There is pain on pressure over the heart, also on inspiring deeply. He is unable to wear his belts at present while on duty as an enrolled pensioner. A swelling occurred some four months ago over the region of the liver, which, after a few weeks, seemed to give way inwardly: a discharge of offensive matter, mixed with shreds and green bilious stuff, being discharged by the bowels. The same sort of discharge, unattended with swelling in the side, has twice occurred since."

The symptoms described evidently point to the occurrence of hepatic abscess communicating with the prima via, and in this way discharging its contents. This is a circumstance which might readily be induced by irritation consequent on some foreign body, such as a shred of the soldier's shirt or uniform having become lodged in the organ at the time this wound was inflicted. Acting Assistant-Surgeon McDowell records in his case-book, as shown above, that Private Mansfield, when he was admitted at Fort Pitt in December, 1856, told him an abscess had formed and burst internally, its contents being discharged by stool, at the time he was under treatment in his regimental hospital in the Crimea, and that the man attributed the occurrence to an early closure of the wound of exit of the ball. There can be little doubt Dr. Dwyer would have recorded this fact in his report had it been brought to his notice. Supposing the man's statement to be correct (and, from his account of the circumstances, it would appear to be not improbable), it would render it not unlikely that the transverse colon was contused, or otherwise injured, by the projectile in its passage through the abdomen; and that, in the usual way, after adhesions had shut off the injured part from the rest of the peritoneal cavity, ulceration had occurred, or a slough had been thrown off, and thus a fistulous connection had become established between the bowel and the track of the ball in the liver. This occurrence would also help to explain the comparatively early cessation of the escape of bile by the external abdominal wound. Such a fistulous opening, once established, though temporarily closed, would be liable to be opened again, under violent exertion, prolonged costiveness, and other such circumstances.

Dr. Ogilvy was kind enough to furnish me with further information regarding the state of this pensioner in December 1862, and in June 1863. At both these dates, the man was still described to be unfit for hard work. The tenderness was reported to continue over the hepatic region, and to be increased on pressure. In 1862, there was still occasionally slight discharges from the bowels, indicating by their colour and appearance that they were derived from a chronic hepatic abscess: but in December of that year they ceased, and had not appeared again up to the month of June, 1863. On the other hand, he had suffered subsequently to the cessation of the discharges by the bowels, almost every morning from nausea, and occasionally from vomiting; the ejecta from the stomach being described as "consisting of matter, mixed with green stuff and streaks of blood." He had also become very liable to suffer from attacks of bronchitis. Still later, during the present month (February 1864), the man has himself informed me that the discharges of matter by the bowels have occasionally recurred during the last few months, while the vomiting has diminished. The tenderness around the waist and in the right side continue; severe pain is felt on trying to wear a waist-belt; and he finds himself much weaker than he was a year ago.

As a pendant to the case which I have just narrated, it may be useful to call attention to another unpublished case of a wound of the liver, which exists among the records of the Army Medical Department. It is one of an English soldier in whom the liver was completely traversed, in Portugal, in 1827, from behind to before by a musket-ball, and who recovered after repeated bleeding by venæsation and the application of upwards of 400 leeches* to the abdomen in the course of the first five days succeeding the injury. This case, so remarkable, whether as regards the rarity of the event of a favourable termination to so dangerous a wound, or the contrast it offers as regards the treatment pursued with the views of the present day respecting depletion, seems to be well worthy of general notice. My attention was drawn to the history of this soldier's wound by Deputy Inspector-General Parry, who watched its progress while the man was under treatment in Portugal. The excess of bleeding was objected to by some surgeons at the time, but Dr. Smith, under whose immediate care the patient fell, attributed the cure chiefly to the free employment of this remedial measure.

The following is a transcript of Dr. Smith's report of the case:—

Josiah Baxter, a private in the 23rd Fusiliers, ætat 35, of stout and healthy frame, was shot by the carelessness of one of his comrades, while practising ball-firing on the afternoon of the 28th April, 1827, at Coimbra, in Portugal. The ball entered close by the right side of the spine of the second lumbar vertebra, and having taken a direction upwards and forwards, was cut out over the body of the seventh rib, about one-third of its length from its sternal articulation. The ball had fractured the rib, and was itself flattened and misshaped. Great prostration of strength immediately followed the infliction of the wound, and the patient presented a ghastly pallid countenance; a small, weak, scarcely perceptible pulse, cold extremities, and occasional tremors. To these symptoms were added dyspnœa, pain and fulness in the epigastrium, vomiting, and frequent, but often ineffectual, efforts to void urine; and the urine, when he succeeded, was tinged with blood. This state of things continued for fourteen hours, so as to render preservation of life very doubtful, though cordials were freely given; when, about 7 A.M. on the 29th, the patient began to complain of pain in the region of the liver. At the same time there was increased dyspnœa, the fullness and tension in the epigastrium were considerably augmented, the patient suffered from thirst, and the pulse was extremely small and feeble. Hirudines xc epigastrio applicr: et habeat haustum purg: statim.

5 P.M.—Has been very uneasy all day; heat of skin increased since morning; breathing more oppressed; fulness of epigastrium, with vomiting; bowels slightly moved; pulse as before. Mittatur Sanguis e brachio ad ℥xxx; fotus abdomini frequenter die applicr.

April 30th.—Blood yesterday buffed and cupped, but syncope supervened before 12 oz. had been drawn. Breathing now easier; countenance less anxious; voids urine freely and without any bloody tinge. Orifices of the wound inflamed, and into the lower one a probe can be introduced nearly its whole length in a direction forwards. Some small fragments of bone removed from the upper orifice. Contr: fotus, et cap: sol: Magnesiæ Sulph: ℥ij quâq: horâ donec alvus bene responderit.

5 P.M.—The medicine has not operated, though 2 oz. of the salts have been taken; feels very uneasy, with considerable tension and fulness over the whole abdomen; tenderness on pressure; thirst more incessant; tongue whitish, but moist; integuments for some extent around the upper orifice of a yellow bilious colour; shirt and sheets deeply tinged of the same hue. Repetr. V. S. ad

℥xxxiv, et hirudines lx; Ol: Ricini ℥j statim, et habeat enema quâq: horâ pro re natâ.

May 1st.—About 6 P.M. yesterday, the patient had a free evacuation, a second in about an hour after, and a third at midnight, all of a dark blackish colour, and this morning he feels much easier. The abdomen is less tense, and gives little pain on pressure; discharge of the same colour as yesterday. Thirst continues, but the breathing is free, and the pulse more regular though small. Blood buffy. Repetr: fotus, et cataplasm emoll: vulneribus applicr.

10 A.M.—Tenderness and tumefaction of the abdomen much increased during the last four hours, though the patient has had another free evacuation. Repetr: hirudines lx, et fotus.

8 P.M. The patient was easy during the day until within the last four hours, when pain, tension, and tenderness of abdomen returned worse than ever, with increased dyspnœa, anxiety, restlessness, and the vomiting more frequent. Repetantur hirudines ad No. c.

May 2nd.—The leeches bled freely, but he is not better; spent a restless night; thirst incessant; discharge increased and still bilious; abdomen much swollen and tender. Repetr: V. S. et hirudines ad No. l., et habeat enema ut antea.

May 3rd.—Continued moderately easy all day after the bleeding and leeching, but all the symptoms became suddenly worse during the night. This morning he is as bad as ever, with considerable irritability of stomach. The discharge continues bilious. Bowels open. Repetantur hirudines ad No. lxxx et habeat haustum efferves: frequenter die pro re natâ.

May 4th.—The leeching yesterday procured considerable relief, and he had a tolerable night. This morning the tension, tenderness, and swelling of the abdomen are less; the irritability of stomach is better, and the wounds are looking well. The discharge is as usual. Repetr: haustus et cataplasmata.

May 5th.—Doing well; the tension and tenderness of abdomen continue to subside. Contr: medicament.

May 6th.—Not so well; feels feverish, with hot skin, quick pulse, dry tongue, and thirst increased. Repetr: haustus quâq: horâ; contr: cataplasm: et fotus.

May 9th.—Wounds looking well. The symptoms noticed on the 6th removed, but the patient complains of throbbing pain in the left iliac region. The discharge is now of a brownish colour. Nil medicament; cont: cataplasm.

From this period things went on favourably; the pain in the iliac region subsided by occasional leeching, but the patient continued for some time to complain of fulness and oppression in the right hypochondrium, with dyspnœa, and pain at times in the right shoulder. Moreover, the digestive organs became more deranged than they were at first, and this condition was accompanied with a degree of low febrile irritation. Quinine, and a due regard to the alvine discharges, removed these symptoms in about a fortnight; and for the last month his general health has been good. The upper wound is closed, and the lower one discharging very triflingly. The only inconvenience he now suffers is a slight inclination of the body to the right side, with occasional pains across the epigastric region.

He was sent home to England in July 1827.

(Signed) T. SMITH, M.D., *Surgeon.*

Remarks.—The recorded cases of recovery after gunshot wounds of the liver are very few. They thus form a strong contrast with wounds caused by cutting and stabbing weapons, for the examples of recovery after them are by no means so rare.* Indeed, although a stab or a sword-cut of the liver must always possess many elements of danger, in the hæmorrhage it may give rise to, effusions into the abdomen, and inflammatory consequences in the organ itself or peritoneum, it should by no means be regarded as an injury having the same fatal character as nearly every other penetrating wound of the abdomen with visceral lesion must be held to possess. If the concave surface of the organ has not been reached, if the gall-bladder and great branches of the portal circulation have escaped, and if the treatment, more especially as to regimen and rest, be judiciously carried out, an incised or punctured wound of the liver will not unfrequently go through the healing process without any interruption.

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* A ruptured liver *may* also become united and healed.—*See* "Cases of Rupture of the Liver, with Remarks," by A. Johnson, F.R.C.S., Med. Chir. Transactions, vol. 34.

But gunshot wounds of the liver have no such favourable tendency. A knowledge of the fatal nature of these injuries may be at once arrived at, not only by estimating the extremely small number of recorded recoveries after them, but also by comparing this number with the probable number of such wounds which occur in battle. When the great bulk of the liver, the extensive space which it occupies, and its superficial and comparatively exposed position, are remembered, it cannot but be concluded that the number of gunshot wounds of this organ in action must be very considerable; and that when the course of a bullet is limited to passing through or across the hepatic region, not a few of them must be uncomplicated with lesions of any other important viscera. Yet, as already noticed, out of the wounds of all kinds which have been recorded in the surgical history of the Crimean war, as having been treated during the campaign (12,094),* the case first noticed in these remarks is the only known instance of survival after an unequivocal gunshot wound of the liver.

The cases of successful issues after gunshot wounds of the liver, published by the surgical writers Guthrie, Hennen, Cooper, and others who were engaged in military practice during the period of the Peninsular campaigns are about twelve in number. Professor Thomson, in his "Report of Observations made in the British Military Hospitals in Belgium after the Battle of Waterloo," remarks that he saw twelve cases of wounds of the liver, in which considerable progress towards recovery had been made before his return from Belgium. Details of the cases are not given by Dr. Thomson, but some of them are evidently included among the number recorded in the writings of the previously-named authors; while others not improbably eventually proved fatal from some of the usual consequences of such injuries.

All wounds of the liver, whether caused by gunshot or cutting weapons, must be attended with the primary risk of excessive hæmorrhage either into the sac of the peritoneum or through the external wound, owing to the great vascularity of the organ, and the want of power in the divided vessels to arrest the flow of their contents by contracting, as they can do, in other situations where their connections with neighbouring structures are chiefly formed by lax areolar tissues. But wounds by gunshot have additional special sources of danger. The torn and contused condition of the separated surfaces surrounding the track of the musket-ball; the greater liability, in consequence, to diffused inflammation being set up, not only in the organ itself, but in its serous investment; the copious suppuration which follows as a matter of course in the progress of the case; the probable irritation, even when the projectile itself passes out, from the lodgment of other foreign bodies, such as portions of clothing and accoutrements; the injuries to neighbouring structures; the various accidents to which the patient is liable during the necessarily prolonged period required for convalescence; all these conditions aggravate the gravity of a wound by gunshot to a vast extent when compared with one of an incised character which may possibly become closed by simple adhesion, and fully explain the causes of the few recorded recoveries which are met with.

The only instances of recovery after gunshot wounds of the liver during the late mutiny in India which I am aware of are those of two officers, one of whom was wounded at Lucknow, the other at Delhi. Their cases are recorded in the "Indian Annals of Medical Science."† In the Lucknow case the musket-ball entered immediately below the ensiform cartilage, passed backwards, and was excised about five inches from the spine on a level with the tenth rib. Bile was copiously discharged from each opening. Both the wounds became completely closed some months afterwards, and, it is stated, no inconvenience then resulted. In the report of the case which occurred at Delhi, the positions of the wounds of entrance and exit are not defined; no mention is made of escape of bile by the wound, nor are any of the signs of the hepatic lesion defined ; but Surgeon Hare, who describes the case, states without reserve :—" On examining the wound, the ball was found to have entered the liver and passed through it." Diaphragmatic irritation seems to have been the leading symptom in the progress of this case. It is much to be regretted that the history does not mention the indications which led to the diagnosis of the liver having been wounded.

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* "Medical and Surgical History of the British Army in the War against Russia," Vol. II., p. 259.

† No. XI, January 1859, p. 164.

No blood-letting was resorted to in the treatment of either of these two last-named cases. During the Peninsular period great depletion by venæsation was invariably resorted to. Mr. Guthrie and Dr. Hennen inculcated its absolute necessity. Professor Thomson writes :—" It cannot be too frequently repeated that copious blood-letting, and the use of the antiphlogistic regimen in all its parts, are the best auxiliaries which the surgeon can employ in the cure of all injuries of the viscera contained within the cavity of the abdomen."* In the case of Corporal Macdonald, 79th Regiment, recorded by Mr. Guthrie,† upwards of 130 ounces of blood were abstracted in the course of the first ten days after the wound, and several bleedings were practised at intervals subsequently. The doctrines which the surgeons of the Peninsular period so emphatically laid down, based as they were upon practical observations, render evident that greater experience of the results of the modern system of abstaining from copious depletion will be necessary before decided opinions can be expressed as to the strict line of treatment demanded by these injuries.

In neither of the two cases which have led to these remarks was a jaundiced condition noticed, nor does the irritation of the skin—the "great and distressing itching,"‡ which Dr. Hennen defines to be particularly one of the usual symptoms of a wound of the liver,—appear to have been present. It will be found, also, that in other recorded cases, the jaundiced colour of the skin has been frequently absent. The cutaneous irritation was probably a casual accident in the case which fell under Dr. Hennen's observation, for I have not noticed mention of this symptom in the history of any other recorded instance of gunshot wound of the liver.

FURTHER HISTORY OF STAFF SURGEON TODD'S CASE OF COMPLETE TRANSFIXION OF THE ABDOMEN BY A BAYONET, WITH REMARKS.

By Deputy Inspector-General T. Longmore.

A very interesting case of complete transfixion of the abdomen by a bayonet, with recovery, was recorded in the last volume of the Army Medical Reports, p. 482, by Staff-Surgeon R. C. Todd.

The accident occurred to Private John Coulon, 99th Regiment, on the march towards Pekin in 1860. The date of its occurrence was the 3rd of September, 1860, and Surgeon Todd's notes of the case extended to the 28th of October following. It may be interesting to follow up the history of this example of so very rare an accident with preservation of life to a later date, and an opportunity of doing so has been afforded by the man having been sent as an invalid to Fort Pitt in the month of June 1862.

When Surgeon Todd last saw this soldier at Tien-tsin on the 28th of October, 1860, he found him "pale, but in good spirits." His digestion was good, his tongue clean, and his bladder acted perfectly. The wound in the back was covered by a small scab ; that in the abdomen had quite healed, and left a small triangular cicatrix. He complained that he sometimes had "a drag in his belly" when he straightened himself up, and also when his bowels were costive, but that "generally they were rather free." In other respects he was quite well.

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* Op. Cit. supra, page 106.
† Commentaries, Edit. 1853, p. 554.
‡ Hennen's Military Surgery, Edin. 1818, p. 472.

In September, 1861, this soldier, being still in China, contracted ophthalmia in the left eye, and this was followed by corneal opacity. Partly on this account and partly on account of a generally debilitated condition, he was invalided to England in November of the same year. Assistant-Surgeon Dr. Macartney, 99th Regiment, forwarded an abstract report of this attack of ophthalmia, and an account of the man's general state of health at that date, and from this document the following history of the after-consequences of the bayonet wound is extracted.

From Dr. Macartney's report, it appeared that although the man had not suffered from ill-health previous to the bayonet injury in 1860, "he was naturally of a strumous habit of body, and this cachexia seemed to have gained strength from the lowering effects of the wound. For a considerable period after being discharged from Hospital on account of the injury, he was never able to stand erect without suffering from dragging pains in the intestines, which were always increased by any tendency to constipation. From these, however, he is now entirely free, though he still continues sickly, and unable to assimilate his food well. Since the accident he has never been fit for the discharge of all the duties of a soldier, and was only employed on light duty up to the time when he was admitted into Hospital suffering from ophthalmia." These remarks bore date of October 31st, 1861.

Private Coulon was admitted at Fort Pitt in June, 1862. He was then thin and debilitated, although, according to his own account, he was stronger and had gained flesh since leaving China. The cicatrices of the bayonet wound were plainly visible in the situations described by Surgeon Todd. The patient stated that he suffered from a constant aching, but not of a very severe kind, in the "small of the back," indicating by his hand the upper part of the lumbar portion of the spinal column. This pain was increased on stooping, but more especially in the act of defœcation, and particularly so if, in consequence of previous constipation, the act was accompanied by much straining. He also alleged that the aching was increased on changes from dry to damp or cold weather. Attempts to carry a knapsack, or to wear a tight waist-belt, caused a sense of constriction in the abdomen, and increased the aching about the loins. While at Fort Pitt his appetite was very indifferent; he was only able to eat a portion of the ordinary diet (half), and he stated that his appetite for food had been very bad ever since the accident. He also suffered habitually from constipation, which was only relieved by the administration of medicine.

These symptoms were considered to be so indicative of cicatrical contractions, involving some portions of the prima via, and there was so little prospect of any permanent diminution of the state of unfitness he was then in for the duties of a soldier owing to his impaired powers of assimilating food, deficient nutrition, and incompetency for exertion when accoutred, that, notwithstanding the nebulosity of the cornea, consequent on the ophthalmia, had in a great degree disappeared, he was discharged from the service on the 17th of July, 1862. He received a pension of 8d. a day for three years, the extension of the pension for a longer period being rendered dependent on his state of health at the expiration of that time.

Surgeon Todd, in his remarks on this case, alluded to another instance of complete transfixion of the abdomen by a bayonet, which fell under the care of Surgeon Gallwey, R.A., in 1854. In that instance the soldier, who was rushing away from pursuit after making a murderous attack upon a sergeant, ran with force upon the bayonet of a sentry, whose carbine was down at the charge. The weapon entered an inch to the left of the ensiform cartilage, and emerged close to the same side of the spinal column. The man recovered with less symptoms than were manifested in Surgeon Todd's case; but as he was transported very shortly afterwards on account of his crime, the ulterior effects of his injury could not be ascertained. Mr. Guthrie has recorded in detail a case of recovery of a soldier whose abdomen was traversed by a ramrod which entered about two inches below the umbilicus, penetrated the transverse process of the second lumbar vertebra, and protruded an inch and a-half behind;* and Dr. Hennen has quoted two instances in which swords had passed right through the cavity of the abdomen without injuring a single fold of the intestines;[*] but in none of these examples are the consecutive consequences of the injury described. It is probable, had the opportunity existed of observing the patients at periods corresponding with the date at which the case of Private Coulon has now been noted, the recoveries would not have been found to be so complete as they at first appeared to be.

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* Guthrie's "Commentaries," 1853, p. 519.

There is another instance of transfixion of the abdomen, with recovery, to which it may be useful to make allusion, as it has led to some remarks by Mr. John Bell in his celebrated "Discourses on the Nature and Cure of Wounds," which I believe to be calculated to mislead those who may happen to refer to them. Mr. Bell explains that the intestines do not really escape transfixion in such injuries as that which fell under Surgeon Todd's notice; but that, notwithstanding they have been pierced by the weapon, they heal so rapidly by adhesion, as to *appear* to have escaped. He applies this doctrine equally to corresponding wounds by gunshot.

The instance of transfixion I refer to is one which fell under the care of Richard Wiseman, and he gives a careful account of the case in the Fifth of his "Chirurgical Treatises on Wounds."[†] His patient had been wounded in the abdomen by a narrow rapier. The weapon had entered in the right hypochondriac region, and its point had passed out at the back. There was no doubt in Wiseman's mind that the intestines and chief viscera had not been opened by the rapier; and he records, as proofs of their having escaped penetration, that there was no tension of the belly, vomiting, colic, nor aught extraordinary by urine or stool, and that the wounds were so far healed on the seventh day under the simplest dressings, that the patient was able to walk abroad without complaint.

In reference to this case Mr. Bell has remarked as follows: "Our good old surgeon, Wiseman, has said with great simplicity, as a great many have said after him, 'Thus it frequently happeneth that a sword passeth through the body without wounding any considerable part.' He means, that a rapier or ball often passes quite across the belly, in at the navel and out at the back, and that, without one bad sign, the patient recovers, and, as has very often happened, walks abroad in good health in eight days; which speedy cure has been supposed to imply a simple wound in which all the bowels have escaped, But we see *how* this is to be explained; for we know that in a thrust across the abdomen six turns of intestine may be wounded; each wound may adhere; adhesion, we know, is begun in a few hours, and is perfected in a few days; and when it is perfect all danger of inflammation is over; and when the danger of inflammation is over the patient may walk abroad. In short, a man thus wounded, if he be kept low, has his chance of escaping by an adhesion of the internal wounds."[‡]

The first and chief danger of these remarks consists in their being made applicable to such a wound as one resulting from a ball passing through the abdomen. The statements of that practical surgeon, Wiseman, by no means justify the introduction of the words "or ball" by Mr. John Bell, in his explanation of Wiseman's meaning. No doubt Wiseman generalizes too much when he says such cases as the one he had just described happen *frequently;* but he altogether excludes *gunshot wounds* in the belly from the remarks which he makes on *stabbing* wounds. He expressly says elsewhere that gunshot wounds penetrating the peritonæum are deadly wounds. "What we have sometime since seen," he remarks, "of a man discharging his excrements out of the *colon* on the left side, and heard of other like wounds of the stomach, are rather miracles than the work of the chirurgeon. If Celsus in his time determined those wounds mortal which were made by cutting weapons, how much more must they be such that are made in our age by gunshot?"[§] When we think of the destruction of tissue which accompanies a perforating wound of intestine by gunshot, and of the contusion of the structures around the perforation, we readily understand that conclusions based on observations of incised or stabbing wounds, especially as regards the process of cure, can by no means be logically applied to wounds from gunshot. The conditions in the two cases are essentially different. The natural mode of cure after penetration of an intestine by gunshot, as shown in the instances in which the wound has not proved a mortal one, is the establishment of fœcal fistula. The fistula, if the case terminate favourably, is only temporary in duration ; but, in other cases, it exists as a permanent consequence. If the abdomen should happen to be traversed by a bullet, and no fœcal fistula follows the injury, it must be taken for granted that the bowel has escaped from penetration.

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[*] Hennen's "Principles of Military Surgery," 1829, p. 406.

[†] Folio Edition. London, 1676. Book V. chap. viii. page 373.

[‡] Third Edition: On the Wounds of the Belly, page 329.

[§] Op: Cit: page 432.

Secondly, although in a very few recorded cases of stabbing wounds of the abdomen, there has been the opportunity, by post-mortem inspection some months after the injuries, of ascertaining that intestines had been penetrated, and had afterwards become closed by adhesive connexions with neighbouring intestines, or with the peritonæal parietes of the abdomen, so that a cure was the result, it by no means follows that this complication is a necessary consequence of every such wound, even although the abdomen may be completely transfixed by a sword or other weapon. In the cases in which the occurrence of penetration of intestines has been proved post mortem, there were sufficient symptoms at the time of the injuries, and during their subsequent progress, to indicate the mischief which had happened. In Surgeon Todd's case, as in the other instances of transfixion above quoted, the evidence leaves no doubt in my mind that the conclusion he himself came to, viz., that the weapon passed through the abdomen without injuring the intestines or any other important part, except the peritonæum, was a true one. The favourable action of the bowels induced by the administration of castor-oil on the third day after the wound, without pain or uneasiness, without any trace of blood in the evacuations, or any ill consequences, is alone a sufficient proof that the alimentary canal had escaped penetration. The absence of characteristic symptoms, and especially the state of the pulse,—only 62 on the day following the injury—equally tend to establish the fact that all the other important viscera of the abdomen had also escaped penetration. There can be little doubt that, during the state of rest which was insured, as far as circumstances would permit, by the judicious administration of large doses of opium at early periods after the injury, the wounds in the peritonæum were closed by the adhesive process; and it seems not improbable that the adhesions which were then formed, by interfering with the natural movements of some of the floating viscera of the abdomen, or by forming abnormal connections between some of those which are naturally more fixed in their relations, caused the occasional sensations of dragging pains, the intensity of which was increased on the patient drawing himself up in the upright position, on distension of the bowels from the effects of constipation, or on straining in the act of defœcation. The same causes no doubt indirectly led to the impairment of the chylopoietic functions, the diminished appetite for food, and the impairment of nutrition. It has been shown by Assistant-Surgeon Macartney's report, that he was never wholly free from these symptoms after the date of his recovery from the immediate effects of the injury, and these were the symptoms which ultimately led to his being discharged from the army as unfit for military service.

The *consecutive consequences* of the transfixion of the abdomen, so far as I am aware, have not been described in any of the instances above mentioned, excepting in Surgeon Todd's case. Had the opportunity existed of watching the subjects of them at periods corresponding with the date at which the case of Private Coulon has now been noted, it seems not improbable, judging from the issue in his instance, that the recoveries would have been found to be less complete than they appeared to be to those who observed and recorded them immediately after their occurrence.

P.S.—Since the above remarks were written, an interesting case analogous to the above-mentioned has been reported in the "American Medical Times," of May the 7th, 1864, by Dr. Hamilton, late of the United States Army, and now Professor of Military Surgery. A young man, a harness-maker by trade, lost his balance while standing upon a table, and, falling forward, encountered in his descent an iron rod used for filling horse-collars. The rod was four and a-half feet in length, and nearly half an inch in breadth at the point. It entered the abdomen four inches below the umbilicus, and two inches to the right of the median line, and came out from the back upon the same side, two inches from the centre of the spine, and nearly opposite to the last dorsal vertebra. The man was able to pull out the rod himself. Dr. Throop, who attended the case, closed the wounds with adhesive plaster, kept the patient on low diet, and ordered the bowels to be moved occasionally by enemata. On the 8th day after the accident the man was able to sit up in bed, and to amuse himself by playing a violin. He subsequently returned to his work, his recovery being reported to be complete. Dr. Hamilton mentions that the history of this case has been published at length in the "Buffalo Medical Journal," for January, 1859. It is reasonable to conclude that in this instance also it so happened that no important viscus had suffered lesion at the time of the accident.

CASE OF ANEURISM OF THE THORACIC AORTA.

Resulting from Secondary Syphilis.

By Assistant-Surgeon Alfred Lewer, Royal Artillery.

Driver M. S., of A Battery, 14th Brigade, Royal Artillery, stationed at Bangalore, East Indies, 25 years of age, came under my treatment on the 1st March, 1863, for an attack of acute bronchitis, and at the same time suffering from secondary syphilis, and presenting the following symptoms: rheumatism, especially painful during the night, large nodes over each parietal bone, also on the tibiæ, with an eruption covering the chest, back of neck, and surrounding the larger joints. From the attack of bronchitis the patient daily improved, and the chest sounds on examination were found nearly natural, with one exception, that of an occasional mucous râle, heard during inspiration between the scapulæ and over the bifurcation of the bronchus. The patient remained in this state, feeling and expressing himself much better, no pain or even uneasiness about the chest, &c., till 9 p.m., on the 29th March, 1863, when he rose up in his bed seized with a violent paroxysm of coughing, and expired. His history was this:

About 10 months ago he was infected with primary syphilis, followed by a suppurating bubo in the left groin; he was treated in the ordinary way (but without mercury), and discharged, after two months; he continued quite free from secondary symptoms for three months, when he returned complaining that the rheumatism had prevented his sleeping at night, and that there was great tenderness of the scalp and down the shins; this increased more or less till the present time (1st March, 1863); the symptoms being, as I have given them in the beginning of the Report.

Autopsy.—10 hours after death.

The body appeared anæmic, covered with the syphilitic eruption, nodes on the parietal bones and over the bones of the extremities.

Thorax.—The lungs were adherent to the costal pleura, the heart displaced to the right side, the lungs emphysematous, and the air tubes generally congested, thickened, of a pinkish colour, tearing on the slightest application of the finger nail.

The heart appeared to be of immense size, caused by the extreme distention of the pericardium; on opening the sac it was found to contain solid clot to the extent of 18 or 20 oz., which had escaped from the bursting of two small aneurismal sacs, existing in the first portion of the aorta, within the pericardium. Four aneurisms were found in this portion of the aorta, all of different sizes, the largest admitting the point of little finger. The lining membrane of the vessel at this situation, and for some extent down the course of the thoracic aorta, presented marked evidences of the syphilitic affection by a thickened condition of the coats of the vessel, the lining membrane, being in many places elevated from effusion, and in other situations depressed, representing small shallow cups, without doubt the cicatrices of old and recent ulcers. The cicatrices exhibited were of different shapes, some irregular with jagged edges, others round and puckering up the serous lining.

Abdomen.—All its viscera healthy.

Bangalore, East Indies, April 1863.

ABSTRACT OF A CASE OF HYDROPHOBIA.

By M. F. MANIFOLD, Esq., Surgeon, 34th Regiment.

An Irishman, a servant by calling, *military* age 34 years, although in reality much older—5 years' service—of which 2 years and 5 months were passed in India, in the 34th Regiment, into which corps he enlisted in 1858, having previously served for many years in Her Majesty's 54th Regiment. A man of regular habits. He reported himself sick between the hours of 5 and 6 p.m. on the 14th instant, when he was seen by Assistant-Surgeon Robinson, and admitted into hospital.

The patient, on admission gave the following account of himself. He said that he had been employed during the day packing and putting away his master's things, that feeling tired and thirsty towards evening, he was in the act of drinking a cup of tea, when he was suddenly seized with spasm in the throat and difficulty of swallowing. Mr. Robinson at once directed an emetic to be given, which acted freely but without affording much relief. Sinapisms were also applied to the chest and stomach. He passed a restless night, and when seen by me the following morning, all the symptoms were aggravated. There was great restlessness, insomnolence, præcordial anxiety and jactitation; while every five or ten minutes he was seized with a paroxysm or fit, which lasted for about a minute, during which his countenance was expressive of apprehension and terror, his breathing was hurried and labouring, as if under painful sense of suffocation. Pulse slow, weak and occasionally intermitting, skin cool, tongue clean and moist, forehead covered with cold sweat. After each fit he remained comparatively calm, until a recurrence of the attack took place. He sometimes screamed as if pursued by a phantom or wild beast that he tried in vain to escape from, and again for a short time lay as composed as if nothing were the matter with him. All this time there was a constant hawking up of viscid mucus from the throat. He spoke and answered questions rationally, the only pain he complained of being referable to the throat and stomach. Up to this time there were no actual grounds for supposing that he was affected with *rabies*, although the case looked suspicious from the first. The precaution was, however, taken of placing him in a ward by himself, in charge of two European orderlies. He was directed a mixture composed of ether, morphia and camphor; as much brandy and soda-water as he could be induced to swallow; six leeches were applied to the epigastrium, and a pill consisting of two grains of the extract of belladonna was directed to be given every second hour. When he could no longer be prevailed on to take his medicine, enemata composed of chloroform min. x, tinct. opi. ʒss., rice water, brandy, of each, ℥j; were administered frequently, together with acid hydrocianic dil. m.v. suspended in mucilage, none of which seemed in the least to control or even mitigate the symptoms, which increased so rapidly, and were so marked as to leave no doubt whatever of the nature of the disease, although, after a careful examination, no mark or trace of a bite could be discovered.

On interrogating the patient if he had ever been bitten by a dog, or any other animal, he replied in the negative, but after some little time admitted to one of the orderlies, that about three weeks previously he had been bitten by a puppy-dog, since dead, the property of an officer, and that the same dog had also bitten the "molly" as well as his master. On making inquiry this statement proved to be too true, and on further examining the patient a small scar was discovered on the palmar surface of the left hand, between the first and second phalanges of the ring finger. The wound had completely healed, was not at all inflamed, and exactly resembled what would be inflicted by an incisor tooth. Unfortunately, no report of the occurrence was made at the time, nor precaution taken to cauterize the part, and thus no doubt the virus was introduced. Towards evening the spasms became so strong as to produce partial opisthotonos, the body being arched forward. His strength was supported by injections of beef tea, brandy and eggs, but even these brought on paroxysms, and were discontinued in consequence. Chloroform was also inhaled, but was badly borne, also the tincture of Indian hemp. At the patient's own request, he was allowed a pipe of tobacco, which he smoked several times and seemed to enjoy, and from which he obtained some temporary relief. As evening advanced he became much worse, and it was evident that he could not hold out much longer; he could scarcely swallow a drop of liquid, and seemed to be fully aware of his danger. Solid ice was placed on his tongue, but even this brought on the fits; ice wrapt in cloths was kept constantly applied to his spine, as recommended by the late Dr. Todd. About ten o'clock he became insensible, convulsions followed by seminal emissions ensued, and at 11·30 P.M. death put an end to his sufferings. I am much indebted to Surgeon White, 8th Bengal Cavalry, who was kind enough to see the case in consultation with Mr. Robinson and myself.

Post-mortem Appearance Eight Hours after Death.

External Appearance.—Muscular development good. Head rather bald, circular patch of ecchymosis, about the size of a shilling, on the posterior surface of scalp. Cicatrix of wound on ring finger of left hand.

Head.—The cavity of the arachnoid contained between 3 and 4 ozs. of clear serum. A similar fluid escaped from the medulla-spinalis, through the foramen magnum. The membranes as well as the brain itself seemed healthy. Larynx, trachea, and pharynx healthy.

Thorax.—Both lungs were congested, and the right contained a number of crude tubercles. There were some old pleuretic adhesions at right side of chest. The pericardium was adherent to the surface of the heart, had lost its transparency, and contained no fluid. Adhesions evidently of long standing.

Abdomen.—Liver healthy, but partially adherent to the diaphragm; stomach, mucous lining highly congested, red and inflamed, especially towards its greater curvature and pyloric extremity. The other viscera were healthy.

Seetapore, 20th April, 1863.

A CASE OF HYDROPHOBIA.

By Assistant-Surgeon D. C. McFall, 34th Regiment.

Private William Tunnicliff, Her Majesty's 34th Regiment, age 24 years, service 5 years, an Englishman, strumous diathesis and delicate aspect, a well-conducted young man of temperate habits, was admitted into hospital on the morning of Wednesday, 12th November, 1862, suffering, as was supposed, from an attack of *remittent fever;* on coming to the hospital, he reported himself as feeling generally unwell, complained of some pain in the head, back, loins and limbs; had a quick compressible pulse; hot, dry skin; bowels constipated.

12th November, 1862, 7 a.m. ordered pulv. Jacobi ver, grs. iv., hydrarg. chlorid, grs. iv., pulv. zingib., grs. ii. statim., and to have a hot bath immediately; eight leeches to the temple and cold to be applied to the head.

2 p.m.—Feels more comfortable after the bath and leeches; skin not so hot; bowels have been acted on. Ordered: Quinæ dis., grs. iv., every 4 hours; Mist. diaphoretica dr. iv., every two hours. The cold to be continued to the head.

6 p.m.—Much the same as at 2 o'clock; has taken his medicine regularly; complains of intense thirst. Medicine to be continued, and to have some soda-water to drink.

13th, 7 a.m.—Feels much worse, states that he has not slept for four nights, seems restless and depressed; complains of stiffness about the throat, that he cannot drink without pain, and that since last night he has been vomiting everything as soon as he swallowed it. Ordered to have his quinine in effervescing draughts, and to have a little champagne occasionally. Liq. morph, mur., m. xi.; mixt. camphor, oz. iv. statim. Sinapisms to the epigastrium.

9 a.m.—Reported to me by the apothecary on duty, that the symptoms of *rabies* were increasing, that when he had last (five minutes since) given him some small quantity of fluid to drink, he seemed to *dread* it ver

much, and that it gave him pain when he drank it; he asked the patient to put his hand into a basin of water, he did so, but immediately felt as if he were going to be choked. Being in the office at the time the report was made to me, I visited the patient immediately, and found the above to be correct. I gave him a table-spoonful of fluid (champagne); and he made *three* attempts to put it to his mouth before he swallowed it, and when he had done so, a slight spasm of the throat followed; I then became convinced of his disease. I examined the whole of his body and limbs, there was no scratch or wound of any description on any part of his hands, arms, or body, and he stated that he had not been in the habit of handling dogs or any other animals for many years, that when he was a boy, 12 *years ago*, he was bitten by a dog, which he believed was *mad*, as it was being chased by a number of men, when it ran at him and *bit him* on the right arm, he had a little girl in his arms when this occurred. There was a very indistinct *cicatrix* on the arm, where he said he had been bitten by the dog.

Ordered a strong mercurial purgative, and to have twenty-four leeches applied along the course of the larynx. Cold to be applied to the head, and tinct. opii. dr. i. statim., and to be repeated in an hour if he did not sleep. To have a little champagne every ten minutes or so from a spoon, and to have a piece of sponge saturated with the fluid placed between his teeth. Bowels have been freely acted on.

2 P.M.—Is a little more composed, complains of intense thirst and very great difficulty in swallowing; the dread of fluids seems to increase. Up to the present he has been able to drink from a spoon after a few attempts to get it to his mouth, but after each time he swallows a severe spasm follows, he looks nervous and depressed, his body is covered with cold perspiration, his pulse is quick and weak, tongue red and dry, countenance gloomy, cannot touch food of any description. Stimulants to be continued frequently, and in small quantities, to have another drachm of tincture of opium immediately, to be repeated in an hour. To have two ounces of strong beef tea injected into the rectum every half hour if the bowels retain it, cold to be applied to the head.

6 P.M.—States that he feels very much better, is decidedly more composed, has been able to drink from the *spoon;* but has severe spasm after each attempt, has had *seven* injections of the beef tea, all of which the bowels retained; he earnestly begs that he may not get another to-night, as he wants to sleep. The dread of the fluids seems to increase, he complains of intense thirst and of the cold (although he is very warmly covered), has a dislike to the servants coming into his room; he has, since the first appearance of the disease, been in a room darkened and perfectly quiet, no person being allowed in but the orderlies and apothecary on duty, he has been able to suck the saturated sponge and rag alternately. The saturated strip of cloth was conveyed to his mouth thus:—A small table was placed close to the side and and top of his bed, and unto the side of the table next him a bamboo about 16 inches long was fastened. Along this bamboo a strip of cloth was passed to his mouth from a cup on the table, which contained some weak brandy and water. By means of this cloth (which he constantly kept in his mouth) he managed to keep his mouth tolerably moist. But withal he complained of the intense thirst, although, in addition to this, he was getting some fluid from a spoon every ten minutes or so.

Medicine and treatment to be continued.

10 P.M.—Is very much worse; is extremely anxious and excited; refuses to take any more from the spoon, or allow the saturated cloth into his mouth; won't touch the fluid or put his hand into it. The sight of any fluid brings on a severe spasm; even when the door of his room is opened it causes a convulsion; or any person approaching his cot brings on convulsions; also the moving of the light the same; won't allow the cold to his head.

Ordered twenty leeches to his temples, and twenty-four more along the course of the larynx; two ounces of beef-tea and two drachms of tincture of opium to be injected into the rectum.

12 o'clock midnight.—Is now quite furious and raving; is foaming at the mouth; hawking and spitting; and cannot allow any person to come near him. The convulsions return every two or three minutes, with increased severity; during each convulsion, towards the termination of the disease, he

bit at the bed-clothes; and on one occasion, a short time previous to his death, he made an attempt to seize the arm of the hospital-serjeant.

No information can be obtained of his having been bitten by any animal since he joined the 34th Regiment. He never kept dogs or any other animals as pets, and he never was in the habit of playing with those of his comrades.

The cicatrix on the arm neither inflamed nor sympathized with the disease; particular attention was paid to this.

The above symptoms increased until 6.30 A.M. this morning, when he died exhausted.

Autopsy six hours after Death.—Brain and membranes congested; serous effusion in the ventricles; lungs much congested; lining membrane of the fauces, œsophagus, trachea, and bronchi much congested; tongue thickened and enlarged.

CASE OF HYDROPHOBIA.

By W. Munro, M.D., Surgeon, 93rd Highlanders.

A Scotchman, aged 33 years, service 15 years, a labourer, has served in the Crimea and India. Has led a very intemperate life, and been twice in hospital with *delirium tremens.* Came to hospital yesterday, April 21st, 1863, looking very ill, and in a great state of excitement; his face pale and haggard, with a peculiar wildness of expression of eyes; skin was cold and clammy; pulse weak and quick; tongue thickly coated yellow; complained of intense nausea and of great debility. He had the appearance of a man just recovered from a severe attack of remittent fever. On the evening of the 20th he came to hospital with fever, and then was ordered by the apothecary an emetic, calomel and opium, and diaphoretic mixture. To-day I have ordered the nitrate of potash mixture, with carbonate of ammonia and tincture of hyoscyamus every hour.

At evening visit last night the apothecary reported to me that the man had been ill all day, and showed symptoms of *hydrophobia.* Ordered lemonade, two bottles, for drink.

Vespere.—On examining him I cannot perceive the symptoms. He complains of pain on left side of face and head, and the expression of face is wild, pulse small and quick; tells me that he has drunk two bottles of lemonade and taken his medicine regularly all day.

Continue mixture of nitrate of potash, with sesquicarbonate of ammonia and sol. mur. morphia.

22nd.—Has not slept all night; skin is warm and moist; pulse very quick, but full; tongue cleaner, but dry; face not so pale, but still has the wild expression; voice changed and become husky. On desiring him to swallow a draught he became excited; chest heaved and throat worked like a hysterical woman's. He got up, however, took the cup in his own hand and swallowed the liquid; the act of swallowing was followed by spasm of the larynx and trachea, which soon subsided; numbness of left side of face and head still present. Diet: beef tea, chicken, and lemonade for drink.

Continue mixture of nitrate of potash and add gr. iii. of sesquicarbonate of ammonia and one drachm of solution of morphia to each dose; one dose every hour. He has no dread of handling water or of washing his face or person, only of the idea of swallowing it.

Inject one pint of beef tea with thirty minims of tincture of opium three times a-day. Extract of belladonna gr. xx.; chloroform ozss., to be used as a liniment to the face.

It appears that two months ago he was bitten (a mere scratch) on the left side of the nose; the dog was destroyed two days afterwards, mad. At the same time a child was bitten by the same dog.

12 o'clock noon.—Has taken his medicine regularly, but refuses all other liquids; attempted to swallow a piece of fowl and a mouthful of egg but failed; is anxious to show that he is not afraid of touching or drinking water,

but either produces, first intense excitability, and afterwards distressing spasm of the throat; during the intervals between these attempts he begs that no water may be brought near him. Has great dread even of the application of chloroform to the face. Continue draughts, increasing the quantity of ammonia to gr. v., and morphia to gr. i. every hour. Shave head, blister, and dress with morphia dressing. Beef tea enemata with spirits of turpentine and tincture of opium.

Vespere, 5.30.—The apothecary states that since my last visit he has been much worse, unable to touch water, or to swallow even an oz. at a time, and that the effort is followed by severe spasm of the throat; that when the beef tea injection was given, intense and prolonged spasm of throat, intercostal muscles and hands followed.

At present the expression of his face is wild and wolfish, his voice rough and husky, and he has a peculiar cough something between the bark and snarl of a dog. He has been often speaking of a dog, and apparently calling one. Skin is cold, pulse is weak, has still great dread of water, but had the courage to put his hand into a basin of water and rub it over his face; but the act cost him a great effort, and brought on slight spasm; he has taken his draught also, but with a great effort. The spasms, however, are much less violent than in the morning.

Dr. Cox, surgeon, 20th Hussars, proposed chloriform, but I have been and am averse to it, as I think it will increase the spasms of the throat. We gave it, however, and severe spasm followed, and the pulse became scarcely perceptible. It was necessary to give a stimulant: gave him a stimulant enema without difficulty, and without causing pain or producing spasm.

10 o'clock.—Since my last visit has been getting worse. At present has great difficulty of breathing, loud harsh rattling in throat, spasmodic action of limbs, and partial opisthotonos; is insensible; has not been able to swallow anything since my last visit.

10.30.—Dead.

Sectio Cadaveris.—April 23rd, 7 a.m.

External appearances.—Extensive ecchymosis over the whole back; no appearance of any scar on face.

Cranium.—Great vascularity of the dura mater, and, on removing it, the arachnoid membrane appeared semi-opaque; the vessels of the brain were distended with blood, and in several of them there were air bubbles. On removing the brain, a quantity of bloody serum escaped, and about two ounces was found in the occipital cavities. Section of brain presented many bloody points; lateral ventricles filled with bloody serum, choroid plexus very vascular; cerebellum soft; portion of medulla removed very vascular. After the brain was laid on the table for examination, serum to the extent of two or three ounces oozed from its substance.

Thorax.—Removed the larynx and trachea carefully; a number of small vessels filled with blood were visible on the concave surface of the epiglottis, and the mucous membrane round the external base of it was of a purple colour. Nothing abnormal was visible in the larynx or trachea.

The lungs—especially the right—were not collapsed, otherwise healthy; heart was healthy.

Abdomen.—Glandular viscera healthy. Intestines enormously distended with air; the small intestines very vascular.

Sealkote, India, April 24th, 1863.

CASE OF DELIRIUM TREMENS.

By A. K. Drysdale, Assistant-Surgeon 79th Highlanders, in medical charge, Convalescent Depôt Darjeeling.

A Sergeant, belonging to the Commissariat Department at this depôt, aged 39, having 21 years service, 20 of which have been passed in India, of short stature, but very muscular, temperament nervous and excitable, was admitted into Hospital on the 5th of August, labouring under *delirium tremens.*

On the 5th, 6th, 7th, and 8th he was treated with opiates, beef tea, and beer.

August 9th.—On the 9th I find in the diary he has passed a sleepless night, very much excited indeed; is constantly imagining voices are calling to him, and bidding him do certain things; has constant spectral illusions; thinks all sorts of evils are being done at his own house. &c.; cannot sleep or even remain quiet for a quarter of an hour.

2.45 p.m.—Tongue moist, swelled, loaded; bowels costive all vomiting ceased; pupils dilated, little sensitive to light; pulse 104, regular, soft, and readily compressed; heart's action healthy; skin moist and colder than natural; very great excitement, with mental delusions; administered half an ounce of the tincture of digitalis, with half an ounce of water.

3.10 p.m.—Up to this time has been much excited, noisy, and with trouble kept in bed; seems rather quieter now; respiration 19.

4 p.m.—Very restless and talkative, constantly troubled with spectral illusions; pupils dilated, but little sensitive to light; the eyelids seem inclined to close against the will.

5.30 p.m.—Still restless, but more easily controlled; pulse 98, firm, full, regular.

6.30 p.m.—Very excited and noisy, with great difficulty controlled; many and absurd hallucinations; pulse 100, smaller but regular; skin temperate; tongue moist; eyes less congested; pupils dilated. Administered another half ounce of the tincture of digitalis with water; a few minutes after this he lay over on his left side and fell sound asleep; respiration was quite natural.

August 10th.—Slept soundly till 7 a.m.; he then awoke for a few minutes, but soon fell asleep again, lying on his right side and breathing naturally. Myself or Mr. Bond (apothecary) remained with the patient yesterday from the time the first dose of digitalis was administered till 9·30 p.m., when, as he was sleeping so soundly and naturally, he was left under the care of two soldiers who were directed to call me should vomiting, purging, or sleeplessness ensue. I saw him at 11 p.m. lying on his side sound asleep and breathing naturally.

Aug. 11th, 11 a.m.—I saw him at this hour for the first time awake, quite sensible; no headache, no unpleasant sensation of any kind; pulse 74, regular, firm; skin cool; tongue clean; pupils natural; rather hungry. He stated he was quite aware of most of the passing events of yesterday, but had no control over himself; that he had slept well, only a little weak; fell asleep again, after taking some tea, till 6 p.m., then he was quite comfortable; took some tea.

August 12th.—Did not sleep much last night, but was quite quiet; pulse 74, regular; no fever; skin cool; pupils natural; tongue moist, loaded; bowels costive; has slight salivation. I gave him a dose of salts, which acted freely, and a little tincture of myrrh, with which to rinse his mouth occasionally.

August 13th.—Discharged to duty, quite well, salivation ceased.

Remarks.

I was induced to try the above treatment, on account of the success of Mr. G. M. Jones, Surgeon to the Jersey General Hospital, in the treatment of delirium tremens with half-ounce doses of the tincture of digitalis, as briefly detailed in the "Edinburgh Medical Journal" for November 1860.

I do not pretend that, from the one case I have treated successfully with half-ounce doses of digitatis, I have any claim to speak of the efficacy of the treatment; but with the successful result of the sixty-six cases, as related by Mr. Jones, I think I may ask medical officers to try this plan.

There was neither purging, nor even the least excessive discharge of urine, in the case treated. The slight salivation was the only untoward result, and it soon ceased.

Darjeeling, September 29th, 1862.

CASE OF CHOREA

Reported by Surgeon-Major J. B. ST. CROIX CROSSE, 11th Hussars.

Although pretty common amongst the factory girls and children of either sex in this place, the infrequency of attacks of chorea in men, and more especially soldiers, must plead my apology for the present notes on a case of the kind, the first I have witnessed in the service, or, indeed, been called upon to treat.

Farrier Major John Dyke, aged 33, and of 16 years' service, a stout, well-chested man, subject to occasional derangement of the digestive organs, but otherwise healthy, reported himself on the morning of the 26th October with what at first sight struck me as commencing *Delirium Tremens;* on examination, however, I learnt from him that whilst in the act of shoeing a horse about 6 a.m., he suddenly found the hammer clenched in the right hand; this was followed immediately by violent jerking of the muscles of the part, and which induced him to come to hospital.

On enquiry I found that with others he had celebrated the anniversary of Balaklava, and on the succeeding day was quite done up and enervated; he scarcely touched any food, and was impressed with the idea of having caught cold about the nape of the neck, a sharp wind driving on the part whilst in the forge.

There was neither pain, headache, nor other symptom of disease admitted; the tongue was natural, as also the pulse, and the subsultus was confined to the hand.

He was put to bed, the bowels cleared, and a mixture ordered every three hours of nepenthe and camphor julep, and quietness enjoined in the hope that a good sleep would put him to rights; and at evening visit he was so far composed and relieved as to be allowed to go to his own quarters. We were, however, disappointed the next morning, both upper and lower extremities being engaged, and to such a degree as to have deprived him of all rest during the night.

He was now given chloric æther, fœtid spirits of ammonia, nepenthe and camphor mixture every hour, which was steadily continued up to 4 p.m., when the action suddenly ceased in the limbs and attacked the abdomen and chest, the muscles of which contracted and became hard; the breathing and heart's action were almost suspended, with partial insensibility, grinding of teeth and involuntary micturition. Turpentine stupes, frictions, and hot drinks were at once employed, and he was comparatively easy till 2.30 a.m., when a second onset occurred, whilst dozing from the effects of chloroform which had been inhaled about midnight.

On the 29th, finding little amelioration in his condition, and that the jactitation was evidently extending, a large *bran mash* was laid over the belly; a purgative of croton oil and calomel with hyoscyamus first, and chlorodine and nepenthe in 10 drop doses prescribed every half hour till relief or sleep was procured, which ensued after the exhibition of about 90 drops of each preparation, when nausea having supervened the remedy was stopped and sal volatile given, which allayed the vomiting. The purgative acting too sharply, the pulse falling, and the speech becoming affected, stimulants were cautiously had recourse to; the spasms moderated, sleep came to him, and there was evident advantage gained when again he was disturbed from a sound sleep by a most violent seizure which now involved the diaphragm and cardiac region, rendering him insensible, unable to articulate, and causing a cold perspiration, with dilated pupils, and weak and compressible pulse. The urine was loaded with phosphates, very high coloured, and the conjunctivæ and skin appeared tinged; and on further inspection the great toe of affected foot was found to be tender and red, with a shining appearance on surface very much like gouty rheumatism, but which he stated he never had suffered from. It was however determined to change the treatment, but before doing so I availed myself of the benefit of Dr. Renaud's opinion, with whose concurrence a blister was applied to the cervical portion of the spine (the spot referred to in the early part of the history), but where neither pain nor tenderness could be detected. Calomel and opium in small and repeated doses with stimulants were prescribed, and it was agreed to continue the chloroform, as it was generally required to soothe him off to sleep.

This line of treatment was pursued with slight modification for three days when a dose of oil was taken which acted with marked effect; the pulse 76, became soft, voice natural, singultus disappeared, sleep was more regular and prolonged, the twitching subsided greatly, the urine became clearer, and the appetite was craving; but there appeared for the first time pain in the shoulder joint, with total loss of power from the scapula downwards, which resisted stupes, iodine painting, sinapisms, &c.; a blister was therefore applied, blue pill, colchicum and colocynth was substituted with effervescing draughts and nourishing diet, and lastly, quinine with brandy, then porter.

The paralysis gradually gave way, the urine became quite clear and natural, and all his functions returned to their normal condition.

He was discharged on the 18th November free from complaint, having been 23 days in hospital.

Manchester, November 24th, 1860.

ADVANTAGE OF CHLOROFORM IN THE DETECTION OF FEIGNED DISEASE.

By Surgeon-Major E. H. Blake, M.D., Royal Artillery.

Cases of malingering, though much less common than they once were, still occur in military practice, and cause much trouble owing to the difficulty of detection. The present case appears worthy of notice, as it proves to what extent a man will persevere when his object is to obtain his discharge, and the great advantage of chloroform in diagnosing cases of this nature.

A very muscular driver of the Royal Artillery was kicked by a horse on the right knee while attending drill on April 23rd, 1862. He was brought to hospital the same evening, the joint being much swollen and painful. Leeches were freely applied, and afterwards hot fomentations; on the subsidence of the acute symptoms, the joint was perfectly stiff. Blisters were now applied, and mercury was given internally, as well as used locally. The joint was also painted with tincture of iodine. By the end of June the joint had nearly recovered its natural appearance, though it remained perfectly rigid. Chloroform was now administered, and under its influence flexion was performed without difficulty. For a time the patient now used his leg though not very freely, and he soon stated that he had lost all power of bending it, as however it could always be flexed with perfect ease under the influence of chloroform, he was discharged to duty on July 28th.

On September 17th he again presented himself, stating that from the time of his discharge he had done nothing but easy duty, and that he was quite unable to bend his knee. On examination the joint appeared perfectly natural, there was neither pain nor swelling, shortening of the limb, nor wasting of the muscles; both knees were exactly the same size, there was no tenderness or fluctuation; in fact, not a sign or symptom of inflammation or disease of any kind could be detected.

A great variety of treatment was now had recourse to. Counter irritation under various forms, cupping, cold douche, mercury, iodine, were all tried in vain. The limb was frequently bent under the influence of chloroform, but without this, if the slightest attempt was made, all the extensor muscles were at once thrown into violent action, and being a very powerful man, he was able to resist successfully every effort to bend it. The leg was frequently kept for days in a state of flexion, secured by a bandage, and though this was said to cause intense pain, it never produced the slightest sign of inflammation, nor did manipulation of any kind, no matter how violent.

Having become convinced as to the true nature of the case, the man was twice brought before a Medical Board with the object of having him handed over to his Commanding Officer, but on both occasions a very guarded opinion was given; the man was therefore kept in hospital until February 12th, 1863, when he was discharged to his duty; he soon after presented himself as a prisoner, stating that he was unable to undergo hard labour. To this I paid no attention, and he went to the cells; on his discharge therefrom he returned to his duty as a driver, which he performed until a few days since, when he purchased his discharge. To the last, when under observation, he kept his leg perfectly rigid, though at other times he has been seen to bend it freely. I may add that the man is a costermonger by trade and of a very bad character. By purchasing his discharge, when he found it hopeless to think of being invalided, his motive was clearly manifested.

CASE OF GONORRHŒAL OPHTHALMIA.

By Surgeon-Major E. H. Blake, M.D.

The accompanying case is worthy of notice, as it strikingly illustrates the advantage of strong solutions of nitrate of silver in a form of disease which, if not checked at the outset, so often ends in total destruction of vision; and as in the experience of the writer, no remedy is equal in efficacy to the one used in this instance.

Driver John Dixon was admitted on July 21st, 1863, with gonorrhœa; on the 30th of the same month he complained of a sensation as if from sand beneath the lid of the right eye; he was ordered to take two cathartic pills and to foment his eye with warm water. On the following day he complained of the same sensation, but there was little noticeable the matter with the eye.

August 1st.—There was decided chemosis of both eyes, with considerable purulent discharge; the pupils were contracted, and there was some intolerance of light. A freshly made solution of nitrate of silver, containing a drachm of the salt to an ounce of water was dropped into each eye, and a blister was ordered to each temple and the eyes were ordered to be frequently washed with a solution containing a drachm of alum to eight ounces of water.

On the 3rd the chemosis and discharge were both less. The solution of nitrate of silver was again dropped in, and repeated for the third time on the 4th. On the 5th the chemosis and discharge had so completely disappeared that the remedy was discontinued, and the eye rapidly recovered its natural appearance. On the 22nd a fresh attack occurred in the right eye only, but this yielded without difficulty, and the patient was declared perfectly well on September 5th. The writer's experience has led him to trust almost entirely to the above remedy, and he has seldom found it necessary to use the application a fourth time.

CASE OF SUDDEN DEATH SIMULATING CHOLERA.

By J. Munday, Esq., Assistant-Surgeon, 20th Regiment.

Private Mich. Dargan, 20th Regiment, æt. 25, admitted into hospital, at Rijghat, on the 1st April, 1863, complaining of being purged two or three times during the day; pulse good, tongue clean. He was ordered some mist. cretæ co. after each loose stool; and sago and milk. On the 3rd April, he was quite free from all looseness of the bowels, and was about to be discharged from hospital, when he suffered from a paroxysm of intermittent fever, for which diaphoretics and diluent drinks were administered. His stomach towards evening becoming irritable and he vomited some bilious matter, for which effervescing draughts of bicarbonate of soda were prescribed.

April 4th.—This morning complained of much purging and vomiting; what he threw up was, he said, very bitter ; his stools were of a bright yellow colour, and of moderate consistence.

A large sinapism was applied to abdomen, five grains of calomel and one grain of opium were given at once, and he was permitted to take small quantities of iced soda-water. At 10 o'clock his bowels were quiet; the retching stopped ; pulse good ; extremities warm ; appeared to be very much alarmed about himself, frequent calls to stool, but passed nothing from his bowels. To take effervescing draught, with carbonate of soda in excess, every half hour. Has partaken of some sago, and bread and milk.

11 o'clock.—Continues in a most excited condition; has been twice to stool since last report, but passed only a small quantity of bright yellow fæcal matter ; is continually leaving his bed and wanting to go to stool ; surface of body warm ; face pale and anxious, with a peculiar appearance of nervous alarm depicted on it. An ounce of brandy, with half a bottle of iced soda-water given, and rest enjoined.

At 12 o'clock, when passing the hospital tents, reporter's attention was drawn to this patient whose general appearance had been strangely altered since being visited but an hour previously. His face presented a sunken expression, his lips were of a livid hue, and he complained of pain in the epigastric region ; his legs and feet were quite warm, but his hands and nails were cold and blue, as also was the surface of his chest. A stimulant, consisting of carbonate of ammonia and brandy, was at once given, and a large sinapism applied to the entire abdomen. All this time his manner was singularly excited, and he could with difficulty be restrained in bed; he several times called out that it was all over with him, and requested the attendant to send for the priest. His wishes on this point were complied with, although assured that his condition was not one to be alarmed at. Brandy and iced soda-water were exhibited, and every effort made to cheer him up, and to try to dispel the horrible terror which seemed to have seized him, but without effect, and after a severe convulsive effort, in which his body was violently contorted, his eyes became fixed, pupils largely dilated, his respirations slow and laboured, the pulse seemed totally extinguished at the wrist, although his body maintained a fair temperature. After a few spasmodic gasps he placed his head on the pillow, and in a few minutes all respiratory murmur slowly ceased, and he died at 12.30.

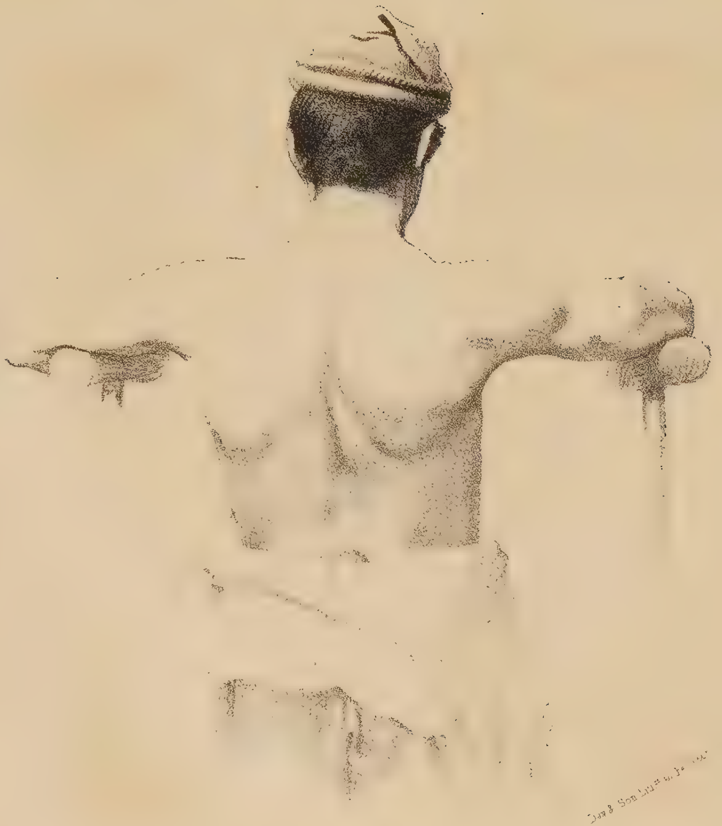
The above would appear to be one of those cases whose fatal termination can only be attributed to what is termed shock, and is similar to that known by the French as *mort de chien*—rapid death during cholera times without the usual symptoms.

[It is to be regretted a post-mortem examination was not made in this case, in order that the non-existence of organic disease or other cause of death than that assigned might have been established.]

CASE OF LACERATION OF MUSCLES OF RIGHT ARM RESULTING IN PERMANENT UNFITNESS FOR SERVICE.

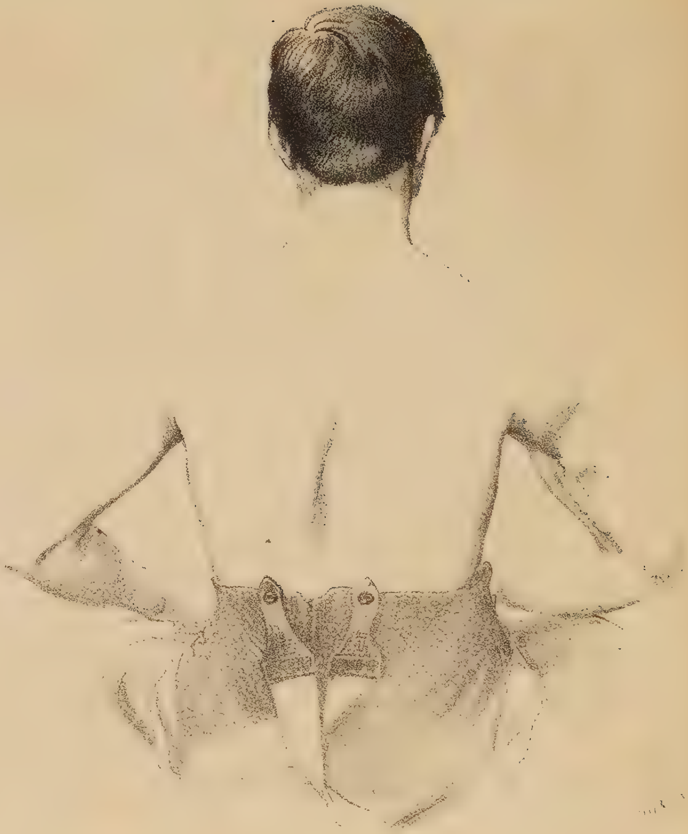
By W. N. Thursfield, M.D., Staff Assistant-Surgeon.

A gunner of the Royal Artillery while serving in Alderney in September 1861, met with the following accident. Whilst engaged at gun-mounting some heavy *shears* fell, and the rope attached to this machine snapped, and coiled round his right arm with great force. Much swelling and pain ensued, as the more prominent symptoms, and these subsided under proper treatment. He remained in hospital in Alderney 57 days ; from the time he left that hospital up to the date of his admission into Fort Pitt Hospital, he was at various



Day & Son Lith[illegible]

[illegible] Brigade Royal Artillery, invalided [illegible]



Case of [illegible] Brigade Royal Artillery, invalided [illegible]
[illegible] 15th January 187[illegible]

stations, Alderney, Woolwich, and Dover, but appears to have scarcely done any duty, owing to inability resulting from the injury to his right arm.

He was admitted into Fort Pitt Hospital on December 4th, 1862. The following is a description of his condition at that date:—A marked constriction or depression, nearly an inch in width on the average, is noticeable completely round the right upper arm, a short distance below the shoulder, on a line with the point of insertion of the deltoid muscle. This is accompanied by two cicatrices, one in the anterior aspect, and a little to the inner side of the arm, a short distance above the insertion of the coraco-brachialis muscle; the other behind, over the triceps, a little below the origin of the external head of that muscle. These cicatrices have a vascular appearance, but are not adherent or painful when touched. The posterior cicatrix is thick and almost cartilaginous; it is itself somewhat numb, and the numbness extends for some inches around it. The structures between the skin and the bone, at the constricted part, feel as if they had become wasted and contracted. The rope in causing the injury appears to have coiled round the arm immediately below the insertion of the deltoid, so that the body of that muscle has apparently escaped injury. The long head of the triceps muscle appears to have been almost if not totally, divided subcutaneously; and, in a similar way, the outer head of the same muscle appears to have been much crushed and lacerated. The coraco-brachialis muscle, just above its insertion, and the short head of the biceps just before its junction with the long head, appear also to have been very considerably injured, if not to some extent lacerated. Probably some of the fibres of the clavicular portion of the pectoralis major were divided near their insertion, as in this situation there is now a marked absence of the substance of that muscle. Of the movements produced by the muscles of the upper arm and shoulder, all are performed feebly, and more or less imperfectly; some of them are so imperfectly performed as to almost completely fail. He can only raise the upper arm slightly above the level of the shoulder; this is owing, in part, to the injury to some of the muscles concerned in effecting this movement, but chiefly, perhaps, to the impediment and pain caused by putting on the stretch the contracted scapular origin of the triceps muscle and the shortened coraco-brachialis tendon. He cannot fully extend the fore-arm on the upper arm; this is owing in part to the great injury to the triceps-extensor and its consequent weakened condition, but principally to the matting together and contraction of the subcutaneous structures at the seat of the injury, on the anterior and inner aspect of the arm. The pain caused in attempts to perform these and other movements of the arm is felt most in the region of the constriction, and appears to be owing to the stretching of the contracted tissues already described. The nerves do not appear to have been implicated to any great extent in the injury, with the exception of the slight and limited numbness before mentioned, for there is apparently very little impairment of sensation or motion, so far as they are concerned. He occasionally complains of a feeling of "numbness" in the fingers of the right arm, but from his own account of it, this would seem to be better described as a tingling sensation. It occurs when he flexes his fingers sharply, or exerts the arm more than usual, and may be owing to the nervous trunks in the neighbourhood of the anterior and inner cicatrix being pressed upon by the contracted subcutaneous structures. When measured as near as possible round the course the rope took in causing the injury, the circumferences of the two arms were as follows. In the injured arm, ten inches; in the other arm, twelve inches and a-half.

[In forwarding this case with the illustrations which accompany it, Deputy Inspector-General Longmore says the nature of the injury is "fully and correctly described," and "the disability therein named quite unfitted him (the soldier) for duty."—T. C.]

CASE OF ICTUS FULMINIS.

Reported by G. McGill, M.D., Assistant-Surgeon 7th Dragoon Guards.
(Extracted from the Annual Report of that Corps for 1862.)

On the 9th of March, 1862, during a thunder-storm in the evening, as a man was passing between the canteen and his barrack at Umballa, East Indies, he was struck by lightning in the right temple and instantaneously killed. Several of the men who were standing in the verandah saw the man fall, and supposed he had slipped; they said his cap was tossed into the air. He was immediately put into a dooly and conveyed to hospital. When examined there was found a jagged wound, down to the bone, in a vertical direction, and about an inch in length. Above and a little in front of the junction of the right ear and head the electric current divided. One portion ran down the centre of the chest and abdomen, and burnt all the hair off the pubis, the other portion ran down the spine; they joined at the perinæum, and then ran down the inner side of one thigh and outer side of the other thigh and leg, and through the heel of each boot into the ground. His clothes were torn into rags and also his boots. There was a broad mark down the body as if from the application of hot iron, where the current had passed, and there was a strong smell of burnt hair from it.

Examination of the Body (post-mortem).—On reflecting the scalp a large ecchymosed spot was seen running across the vertex, in which direction there was a fracture of the skull. The membranes of the brain were found congested and the brain softer than usual throughout; the blood was fluid, and smelt badly; the lungs were so congested as to resemble a mass of liver; the heart was filled with fluid blood; all the viscera of the abdomen were also much congested; putrefaction was rapidly setting in, and the smell from the body was very disagreeable. [The length of time which had elapsed between death and examination is not stated, but as the death occurred in the evening the autopsy was most probably delayed till the following morning.—T. C.]

OBSERVATIONS ON THE EXAMINATION, AND ON THE PHYSICAL DISABILITIES OF RECRUITS.

By Staff-Surgeon Thomas Crawford, M.D., Army Medical Department.

The recruiting of the British Army is based upon the principle of voluntary service. The supply of recruits depends, therefore, to a great extent upon the state of the labour market, and is influenced also, either directly or indirectly, by the relative advantages which the public service offers to the youths of the poorer classes as compared with the prospects of emigration. There are other minor influences at work, such as domestic disagreements, unsettled habits, a disinclination to constant employment, &c.; but actual want of employment is the great stimulus to enlistment.

The process by which the ranks of the army are recruited is of sufficient interest to justify a brief notice. It is not, however, on this account that these remarks are offered for consideration. The peculiar nature of the service, causing, as it does, a variable demand for recruits, and the employment of a variety of agencies in obtaining them, necessitates an unusual degree of latitude in framing instructions for the guidance of those engaged in recruiting. That misinterpretations of such instructions, and differences of opinion, the result of such misinterpretations, should arise among army surgeons is not surprising, and it is with the view of removing some of the causes which have led to this result, that these remarks have been written.

ORGANIZATION OF THE RECRUITING SERVICE.

The agencies employed in raising recruits for the army are as follows:—

1. Regiments at home and Depôt Battalions recruit at their respective head-quarters.

2. The Recruiting Department, properly so called, which consists of a staff of officers and men distributed over Great Britain and Ireland, both of which have been divided into districts and subdivisions for convenience and facility of administration. There are seven districts, four of which are in England, two in Ireland, and one in Scotland. Each district is presided over by a military officer, not under the rank of Field Officer, who is styled Inspecting Field Officer, and under whom there is an adjutant, a paymaster, and a staff-surgeon. There are also other officers of inferior rank, known as sub-division or superintending officers, under whom the non-commissioned officers and men employed in the sub-divisions act, and who are subordinate to the Inspecting Field Officer of the respective divisions or districts in which they are employed.

These agencies are under the control of the Adjutant-General of the Army, assisted by the Inspecting Field Officer of the London District, who acts under the Adjutant-General as Superintendent of Recruiting.

Other agencies have been employed from time to time in raising recruits, but being only temporary, and not differing materially in the mode of procedure observed in the more permanent recruiting department, it is unnecessary to allude to them here.

PERIOD OF SERVICE.

The periods of service for which soldiers are enlisted under the "Army Service Act," and its amendments now in force, are, on first enlistment, for any term not exceeding ten years in the Infantry, and twelve years in the Cavalry or Artillery, or other ordnance corps, and these terms may be extended on re-engagement for any further term of years, which, with the first period for which the soldier enlisted, does not exceed a total of twenty-one years in the Infantry, Artillery, or other ordnance corps, or twenty-four years in the Cavalry, computed in all cases from the date of original attestation, or from the date on which the soldier attained his 18th year, in case he should have enlisted at an earlier age. There are certain qualifying clauses in the Act calculated to meet contingencies likely to arise, such as the desire of a soldier to prolong his service beyond these periods, or the occurrence of war rendering his servitude compulsory although the period of his contract may have expired, but they do not affect the question of recruiting.

PROCEDURE ON ENLISTMENT.

The receipt of enlisting money is held to constitute enlistment, after which the recruit is taken before the recruiting officer, who ascertains his height, circumference of chest, apparent age, and decides on his general appearance and eligibility. Should he consider him eligible, that portion of the attestation document in which the recruit's description appears is filled up, and the recruit thus identified is taken before the surgeon for examination. Should the surgeon find the man fit for the service, he signs the usual certificate of fitness on the first page of the attestation. If unfit, the fact should be stated on the face of the certificate, the cause of unfitness being given for the information of the superintending officer. Certain formalities having been attended to, the recruit who has been found *fit* is subsequently taken before a Justice of the Peace for attestation, after which, if enlisted at the head-quarters of a regiment or depôt, he is again taken before the surgeon of the regiment for re-examination and confirmation, and then to the officer commanding, who finally approves of the recruit, and certifies on the face of his attestation document that the portions of the Mutiny Act which refer to his attestation have been fully complied with.

In districts the proceeding, as to its latter stage, is somewhat varied. Recruits enlisted at out-stations are taken to the nearest military medical officer for examination before attestation, or to a private medical practitioner residing on the spot, should there be no army surgeon within a reasonable distance. If found fit, the recruit is attested and forwarded to the head-quarters of the district (if not in the immediate vicinity of his regiment or depôt), where he is again medically examined by the District Surgeon, and approved by the Inspecting Field Officer, should these officers see no reason for rejecting him. The approval of a recruit by an Inspecting Field Officer is stated to be *final*;[*] and it is so on all points but one, namely, the physical fitness of the recruit as determined by the surgeon of the regiment or depôt to which the man belongs, and who is required to *confirm* all previous medical certificates of fitness after having satisfied himself by a careful examination of the recruit that they are correct. Should he not be satisfied on this point, the regulations direct him to report the matter to his Commanding Officer for submission to the General Officer commanding the District, in order that a Medical Board may be assembled to determine the point at issue. The decision of such a board so assembled is final, and if the recruit be found unfit he is discharged, and the previous approval of the Inspecting Field Officer is thus set aside.

Practically, therefore, the *confirmation* of previous medical certificates of fitness of recruits by the surgeon, or medical officer in charge of the battalion to which they belong, is *final*, whether the previous medical examinations have been made by civil practitioners or army surgeons alone, or by both in succession as is the case in recruits from out-stations who pass through the District, or in the first instance by the regimental medical officer himself.

The Commissioners, at page 7 of the *Report on the present System of Recruiting in the Army*,[†] state that—" A Recruit enlisted at the head-quarters of a Regiment or Depôt is medically examined but once, namely, by the Medical Officer of his Corps; a recruit enlisted at the head-quarters of a Recruiting District is medically examined twice, namely, once by the District Staff-Surgeon, and again by the Medical Officer of his Corps. A Recruit enlisting at a Recruiting Out-station is medically examined three times, first at the place of enlistment by a Military Medical Officer, if available, or by a private medical practitioner, secondly by the District Staff-Surgeon at the head-quarters of the District, and thirdly by the Medical Officer of his Corps." This appears to be to some extent at variance with the regulations of the service and with the actual practice in many, if not in all regiments; for although it is not distinctly stated that any class of officers shall examine the same recruit more than once, the wording of the certificates embodied in the attestation documents renders this compulsory. In the first page of these documents, and immediately below the description of the recruit to be attested, is the following:—

Medical Certificate.

" I have examined the above-named recruit, and find that he has no rupture or mark of any old wound or ulcer adhering to the bone; he is free from varicose veins of the legs, and has the full power of motion of the joints and limbs. He is well formed, and has no scrofulous affection of the glands, scald head, or other inveterate cutaneous eruptions; and he is free from any trace of corporal punishment, and not marked as a deserter with the letter D. His respiration is easy, and his lungs appear to be sound. He has the perfect use of his eyes and ears. His general appearance is healthy, and he possesses strength sufficient to enable him to undergo the fatigue to which soldiers are liable. I consider him fit for Her Majesty's service. He has the following particular marks or scars, viz: ______________________."

" *Surgeon.*"

After the recruit has been attested he is again medically examined, as already stated, when a second certificate on the same document must be filled up and signed by the examining surgeon as follows:—

Medical Certificate on Approval.

" Re-examined by me at   on the   day of
186   , and I consider him   for service."
"   *Surgeon.*"

On joining the regiment or depôt to which the recruit belongs, if not previously examined by the medical officer in charge, he must again undergo a medical examination before these certificates can be "confirmed" by the surgeon, as required before the attestation documents can be certified as complete, and in accordance with the regulations. This final confirmation does not of necessity imply an examination by the surgeon, and would not entail one in the case of recruits previously inspected by himself; but in all other cases it is compulsory on the Regimental Medical Officer confirming the certificates to do so, as the Medical Regulations distinctly state that the signature of a medical officer to an attestation will be considered tantamount to a declaration that he had personally examined the recruit in question according to the instructions, and that the man had no blemish except such as may be noted on the attestation.* It is clear, therefore, that whether the Regimental Medical Officer's examination be primary, intermediate, or final, it must be a *boná fide* examination at least once in the case of every recruit admitted into the regiment or battalion of which he holds medical charge, and twice in the case of all recruits not previously inspected by some other surgeon, so that no recruit can be passed into the service under existing regulations without having undergone at least two surgical inspections.

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[*] Queen's Regulations, 1859, page 316.

[†] Report of the Commissioners appointed to inquire into the Present System of Recruiting in the Army, 1861.

Recruits sent direct from sub-divisions and out-stations form another exception to the statement of the Commissioners. In the Queen's Regulations for the Army it is directed that recruits so sent shall be inspected by the Officer Commanding the Corps. "When a recruit thus sent *direct* is rejected for any cause shewing culpable inattention on the part of the subdivision officer he will at once be discharged with a protecting certificate and sent back to the place of his enlistment, and the Commanding Officer will insert on his attestation *All expenses disallowed*."† It is obvious that recruits so sent from out-stations *direct* to their regiments or depôts can not be inspected by the District surgeon, and consequently are not necessarily three times examined, as stated in the Report of the Commissioners.

These discrepancies have been alluded to here not so much for the purpose of correcting the errors into which the Commissioners have fallen, as to draw attention to an important provision of the existing regulations, namely, the absolute certainty that every recruit passed into the service shall have been examined by a Medical Officer of experience at least *twice*, and that in all instances, except when recruits are primarily examined by the medical officer of the regiment to which they belong, such examination shall be by different medical officers, and at different times.

The framers of these regulations having in view the best interests of the service as well as the impossibility of devising rules which would meet every case, have wisely limited them to general principles, and provided for possible differences of opinion by directing an appeal to a Medical Board in doubtful cases, or when that is not practicable, to the Director-General of the Army Medical Department.

As much misapprehension exists among medical men, both civil and military, regarding the alleged power of regimental surgeons to reject recruits who have been *attested* on certificates of fitness granted by them, it may be well to state here that a certificate of fitness signed by a legally qualified medical practitioner can only be set aside by the decision of a Medical Board, or by the Director-General of the Army Medical Department in cases which do not admit of being so disposed of.‡

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* Medical Regulations, 1859, page 101.

† Queen's Regulations for the Army, page 317, paragraph 17.

‡ The rejection of recruits on re-examination has always been a source of much annoyance to those medical officers and civil surgeons whose opinions were thus set aside, as well as to the authorities whose duty it was to determine the amount of culpability involved in the approval of a man as fit, who, on subsequent examination, was declared to be unfit for the service. Various methods of dealing with the inherent difficulties of the question have been adopted from time to time, the most noteworthy of which is the practice of disallowing the expenses incurred in the enlisting of the man, and charging the amount against the medical officer who originally passed him into the service.

In 1817 the Prince Regent, finding that a number of recruits who had been intermediately approved by medical officers, were subsequently rejected as unfit by district surgeons, directed that the expenses incurred on account of the recruits

Physical Fitness of Recruits.

The determination of this point rests in part with the military, and in part with the medical officer, and as some misapprehension exists as to the precise imits to be assigned to each in his examination, notwithstanding the existence

should be charged against the medical officer by whom they were passed in the first instance. The Regulation of 29th April, 1817, was rescinded by a letter from the War Office, dated 11th March, 1822 (Marshall).

Two years experience of freedom from pecuniary responsibilities on account of recruits seems to have had a marvellous effect in lowering the standard of physical fitness. On the 14th August, 1824, the Adjutant-General writes, "that of the recruits which are raised, more especially for foreign service, the majority are of an ineligible description," and that the Commander-in-Chief is therefore obliged to declare that "he will consider it his duty to recommend the immediate removal of the Staff of any district which, after the present warning, shall be reported to have produced objectionable recruits, as well as to fix on the culpable officer in every practicable case the expense attending the enlistment of a subsequently rejected recruit." How far this threat operated to correct the evil complained of by His Royal Highness does not appear; but it is probable subsequent experience was not sufficiently satisfactory to justify the total abandonment of the practice. In the War Office Regulations, dated 1848, at page 174, paragraph 586, it is stated, "If any recruits shall be rejected for causes evincing culpable inattention on the part of the officer who enlisted, or the medical officer who examined them, the expenses incurred in each case will not be allowed against the public."

In 1851 the number of recruits rejected by Staff Surgeons of Recruiting Districts, "on slight and insufficient grounds," and their rejection being ascribed to "a feeling of apprehension on the part of Staff Surgeons that their judgment may be afterwards questioned and set aside by medical officers of inferior rank, and of less extensive experience," led to the promulgation of an order declaring the approval of a recruit by a District Staff Surgeon final.

This was followed by a circular from the War Office, dated January 5th, 1855, in which the Medical Officer is relieved from all "pecuniary responsibility for the exercise of his judgment in the discharge of this duty, excepting only in such cases of manifest carelessness as, in the opinion of the Director-General, require that such responsibility should be enforced."

On the 23rd of December, 1857, the approval of recruits by Inspecting Field Officers was declared final; but Commanding Officers and Surgeons of Regiments were directed to continue to make any remarks upon the attestation of a recruit before signing that document, and such men as were objected to were to be brought before the General Officer at the first inspection after joining. The great demand for recruits during the Indian Mutiny, and the stringent nature of the instructions for the surgical inspection of recruits, led to the issue of a circular from the Medical Department, dated February 3rd, 1858, in which the Director-General calls special attention to the practice of rejecting recruits for disqualifications which should only be regarded as defects. In this document Dr. Smith says, "I have long suspected that too much weight is given to what are usually designated 'varicose (enlarged) veins,' and I beg to urge upon you the necessity of only attaching much importance to them when they show, besides enlargement or fulness, decided marks of disease."

"Flat feet form another fruitful cause of rejection, and I am inclined to believe too much stress is laid upon this defect; and I advise that it be only considered to justify rejection when it exists to a very considerable degree. I have seen many men with flat feet walk and march very well."

"Besides the two causes of rejection mentioned, I have also to call your particular attention to three which are, I suspect, too often considered disqualifications. Varicocele, relaxation of abdominal rings, and loss of teeth, occasionally appear to an extent which will render it proper to regard them as sufficient to warrant rejection; but I strongly suspect they are, in many instances, assumed to be disqualifications when they should only be regarded as defects."

The effect of these instructions was eventually to relax the rules, and lower the standard of physical efficiency to such a degree as to necessitate a recurrence to the old system of disallowing the recruiting expenses in cases of recruits rejected for causes which indicated carelessness on the part of the medical officer who first examined them; and to subject every recruit to the final scrutiny of the Regimental Surgeon, who is unquestionably the best judge of what constitutes an efficient soldier. The necessity of the latter measure was fully established before the Commissioners appointed to consider the present system of recruiting in the Army, by His Royal of definite instructions on the subject, I shall recapitulate such portions of the regulations as bear upon this question.

In the General Order fixing the stature of the recruits for the various branches of the service, in addition to height and age, the Superintending Officer is made responsible for the chest measurement. The following are the instructions on this point:—"The recruit is to be measured round the chest in a line over the nipples, with his arms placed straight above his head, the backs of the hands touching each other, and the edges of the feet together, and at the same time made to count the numbers from one to ten in a loud tone of voice, and slowly. The superintending officer, and not the surgeon, will be held responsible for the correctness of this measurement."

This is not intended to debar the surgeon from measuring the man's chest, however, either as a means of testing its capacity, or in order that he may be able to verify the superintending officer's measurement before copying the latter into his Recruit Register; and as it is possible the measurements by the surgeon may not correspond with those taken by the recruiting officer, the order already quoted provides that—"Whenever a difference of opinion arises at the head-quarters of any corps, depôt, or recruiting district, as to the chest measurement of a recruit, a special report is to be made to the Adjutant-General, for submission to His Royal Highness the General Commanding-in-Chief, as to the final disposal of the man."* The question of *stature* is entirely within the province of the superintending officer, who is also responsible for the age and character of the recruit, and for the exclusion of seafaring men.† Attention to these points on the part of medical officers engaged in the recruiting service, as well as of medical boards, would relieve them from some trouble, and prevent much correspondence.

INSTRUCTIONS REGARDING THE SURGICAL EXAMINATION OF RECRUITS.

"In the selection of recruits medical officers must be guided by their judgment and experience in choosing men possessed of the physical capacity requisite for the endurance of toil, hardships, and exposure, as well as of sufficient intelligence. Recruits from country districts are far preferable to those from towns."

Such is the preamble to *the principal points to be attended to* by the surgeon in the examination of recruits. It may be premised that the ordinary reading of these paragraphs is sufficiently clear to render explanation unnecessary; but it is equally certain that their meaning is frequently misunderstood. For example, it is not unusual to find surgeons, both civil and military, appealing to the above extract as authorizing them to determine the fitness of the recruit according to their own judgment and experience, regardless altogether of the subsequent paragraphs which indicate the manner in which medical officers are to avail themselves of their experience in the service in determining how far any given defect is likely to disqualify a recruit for the efficient performance of the duties of a soldier in all climates and under all circumstances likely to arise.

Before discussing the subsequent paragraphs, some points which do not come properly under any of the heads given in the instructions may be disposed of. These may be conveniently considered in the following order:—

I. The state of the skin.
II. The muscular system.
III. The vascular system.
IV. The osseous system.

Highness the Duke of Cambridge, Colonel Jeffreys, Dr. Mapleton, and others, to whose evidence the reader is referred for further information on this point.

The probable demand for recruits to replace the ten years men who will have completed their period of service in 1864–65, and the difficulty of obtaining good recruits under existing restrictions have led to the discontinuance of the system of charging the expenses against medical officers; but it is hoped the rule which imposes a final approval of recruits by the Medical Officer of the Corps to which they belong, will not be again abrogated.

* General Order, No. 806, dated Horse Guards, 14th January, 1862.

† Queen's Regulations, 1859, pp. 314–318.

1.—*Of the Skin.*

"The external characters of a sound constitution and efficient limbs may be briefly stated as follows, viz.:—A due proportion between the trunk and members of the body. A countenance expressive of health, with a lively eye, *skin firm and elastic, lips red*, teeth sound, voice strong, chest capacious and well formed, belly lank, limbs muscular, feet arched and of a moderate length, hands large rather than small." Such was the terse and graphic language of the older regulations. On turning to those issued by the late Lord Herbert, when Secretary of State for War, we look in vain for any mention of the skin, or the indications to be derived from it, except in so far as its condition may be determined by the existence or non-existence of ringworm, cicatrices, or marks of medical treatment. The classification of diseases and defects of recruits, as recapitulated at page 140 of the regulations, is equally inconclusive, inasmuch as the return appears to imply that recruits may be labouring under any given malady, and yet be fit for the service. There is reason to suppose that the old rule, which declared 'diseases, whether acute or chronic, for which medical treatment is required' common causes of rejection, is generally acted upon by medical officers, and with a few exceptions, such as psora, the milder forms of herpes, acne, urticaria, &c., it is as applicable to affections of the skin and subjacent glandular structures as to any other forms of disease. As, however, the cutaneous diseases just mentioned, as well as affections of the scalp and all graver diseases accompanied by eruptions on the surface of the body, generally indicate either constitutional weakness, depraved condition of the blood, or derangement of the digestive organs, the surgeon will do well to consider carefully all other points bearing upon the recruit's fitness for the service before approving of any man so affected.

There are other indications to be attended to during the examination of the skin, such as marks of previous disease and of medical treatment, the existence of cicatrices from old wounds, ulcers, burns, or scalds, marks of punishment such as flogging, branding, &c.

Extensive stains on the skin point to previous attacks of severe cutaneous affections, secondary syphilis, and the like, which rarely leave the constitution of their victims uninjured; while marks of medical treatment are held to indicate previous attacks of organic disease likely to recur on exposure to the causes which originally produced them. Marks of cupping, or of setons, issues, &c., in certain localities, are circumstantial evidence of specific affections of a disqualifying nature; *e.g.*, at nape of neck they indicate previous cerebral derangement, epilepsy, or the like; over the larger joints, synovitis or acute rheumatism; over the chest or abdominal regions, previous inflammatory affections which frequently lay the foundation of organic disease. Above all, there is a large class to be found scattered over the country, who, having previously passed through the public service, and having been discharged for various causes, subsequently try to re-enlist. These are, for many reasons well understood by military surgeons, ineligible recruits, and the rules which exclude them ought to be carefully observed. In selecting recruits a preference should always be given to men who have not previously suffered from organic disease necessitating local treatment.

Of cicatrices, ulcers, wounds, and the like, little need be said. An extensive cicatrix situated over any part of the body or extremities subject to friction either from clothes or accoutrements, although non-adherent to subjacent structures, is a disqualification; and when the cicatrix is *puckered*, adherent to muscles or their tendons, or to bone, there can be no doubt of the man's unfitness for the service. Such cicatrices are very liable to give way under the hardships to which all soldiers are exposed, and when extensive, though not subject to any unusual irritation or pressure, they are almost certain to reopen should the soldier ever be subjected to privation, or obliged to live on a restricted dietary having a tendency to produce scurvy.

Superficial abrasions, or ulcers resulting from slight wounds or the like, rarely entail rejection as they heal up readily; but ulcers of long standing or venereal origin, or cicatrices of ulcers in the vicinity of enlarged or varicose veins, are disqualifications which should not be overlooked. Marks of old wounds involving injury to the bones of the head or extremities, are also sufficient causes of rejection; but these injuries will be considered subsequently.

Under the disqualifications associated with the skin are the physical and indelible stains of moral depravity, such as marks of corporal punishment, or the letters "D" or "B. C." The latter will be found, when they exist, a little to the left of and about two inches below the left nipple. Marks of flogging are not always very distinct, and may escape observation, while instances of successful attempts to obliterate or alter the letters are not uncommon. In the latter case, however, a scar, or a figure into which the letters above mentioned have been incorporated, will be found in the usual site.

During the examination of the surface of the body, indications of scrofula, should it exist, will generally be found in the form of old cicatrices in the neck or other parts of the body, glandular swellings and the like, all of which are unqualified causes of rejection. A man so affected, although but to a slight extent, would not be received by any experienced regimental surgeon unless by compulsion; and officers passing such men must be prepared to find their opinions set aside.

With the skin may also be considered its appendages, as well as those portions of the mucous canals which impinge upon its surface. The finger-nails are not frequently the seat of deformity or disease to an extent which disqualifies for service; but in the case of the toe-nails this is not so unusual. Deformity of the nail of great toe, or an incurvature of its edges from pressure or other causes, is frequently accompanied by a form of ulceration known as *onyxis*, which is a disqualification in a recruit.

Alopecia, as indicative of age, or of pre-existing syphilis, or other disease affecting the scalp, is worthy of attention, but is not a certain sign of either the one or the other. When it occurs in a recruit who represents his age as under 26, however, it should be considered as a disqualification, baldness, uncomplicated with constitutional infirmity, being very unusual at such an early age.

II. *Of the Muscular System.*

The instructions for the examination of the various regions of the body will necessarily include the muscles peculiar to each, and the symmetrical development of those on the different sides of the body will be considered when determining the form and development of each part. There are, however, some circumstances which require special notice, such, for example, as the influence of special occupations on particular sets of muscles. In some mechanics the muscles of a particular limb will be more fully developed than those of its fellow; but, provided the corresponding muscles are *sufficiently* developed to meet the requirements of the individual under the circumstances in which the soldier will be placed, an excessive development of those on the opposite side, unless amounting to absolute deformity, should not cause the recruit's rejection. Occasionally the rupture of a muscular tendon, or its dislocation from its proper bed or groove, as occurs in cases of laceration of the annular ligament at the wrist, will be found to exist, and should be considered a sufficient cause of rejection. Sometimes a particular muscle, or a portion thereof, will be found deficient or so atrophied as to be almost useless. Such disqualifications are easily detected, and will rarely escape observation provided the ordinary rules for examining the recruit be attended to.

III. *Of the Vascular System.*

Absolute freedom from disease of the heart and blood-vessels is essential in a recruit. It is, therefore, very desirable that the circulation should receive due consideration from the surgeon. As a rule it will be safe to consider a heart of ordinary size and regular action, in the normal position, and not materially influenced by the exertions entailed on the recruit during his examination if done according to the instructions, as sufficiently free from disease to meet the above conditions in so far as it is concerned. A little excitement of the heart's action may be allowed for as normal under the circumstances; but should the regularity of action or distinctness and clearness of the sounds be thereby influenced he should be rejected. The diagnosis of specific affections of the heart in the time usually available for the examination of a recruit can hardly be expected, but it is a matter of importance that this should be done when practicable. It often happens that palpitation depends, not upon any cardiac lesion, but upon obstruction to the circulating current in some other organ, such as the lungs or liver, and when this is the case the surgeon may commit an error in assigning a cause which, being secondary, is only brought into action under peculiar circumstances or conditions, such as violent exertion. The practical disadvantage resulting from an error of this kind is, that should disease of the heart be assigned as a cause of rejection on re-examination of a recruit who in reality suffers from incipient disease of lungs, or some other affection calculated to re-act on the heart, a medical board or an individual medical officer may, by having his attention solely directed to the heart, declare the disease non-existent, simply because the man has not been required to make those violent efforts which, in the first instance, made its existence apparent.

Aneurisms are rare at the recruit's age, and when they do exist they generally influence the circulation and the heart's action to an extent which will attract the surgeon's notice. The diagnosis of internal aneurisms is proverbially obscure, but in all cases in which they exist to any appreciable extent there will be evidence of derangement of the individual's health, or of the functions of some vital organ, to a degree which will justify the rejection of the recruit on the grounds of ill health alone.

The chief cause of rejection under this head, however, is varix, and especially varicose veins of the legs. In 1860 out 16,799 primary inspections in the United Kingdom 481 or 28·63 per 1,000 were rejected for this cause alone, while out of 11,054 secondary inspections ranging over the same men, 178 or 16·10 per 1,000 were rejected, making a total of 659, or 44·73 per 1,000 rejections during the year, exclusive of those rejected on account of varicose ulcers of the legs, varicocele, &c.

In 1861 the numbers under this head range still higher, the rejections for varix on primary inspection being 40·79 per 1,000, and on secondary inspection 18·82 per 1,000. These numbers indicate a very unusual amount of disease of the veins, as compared with the arteries, at an age when the human frame may be considered at its prime. It is desirable, therefore, to examine more minutely than has been done under the previous head the condition of the veins usually found to exist in rejected recruits, and the soundness of the views entertained by army surgeons as to the disqualifying effects of such disabilities.

The following Tables show the strength, admission into hospital, and deaths in the various arms of the service at home during 1860 and 1861 under this head.

1860.

Description of Troops.	Strength.	Admissions for Varix.	Deaths from Varix.
Household Cavalry	1,223	6	..
Dragoon Guards and Dragoons..	8,696	10	..
Royal Artillery	11,724	6	..
Military Train	1,657	..	..
Foot Guards	5,801	1	..
Infantry of the Line	25,117	27	..
Cavalry Depôts	1,248	2	..
Artillery „	2,469	..	..
Infantry „	24,161	35	..
Total	82,096	87	..

1861.

Description of Troops.	Strength.	Admissions for Varix.	Deaths from Varix.
Household Cavalry	1,219	1	..
Cavalry	9,528	9	..
Artillery	10,021	9	..
Military Train	1,817	1	..
Guards	5,811	8	..
Infantry	26,719	28	..
Cavalry Depôts	1,101	1	..
Artillery „	3,314	5	..
Infantry „	21,970	30	..
Total	81,500	92	..

It appears, therefore, that during these two years the admissions into hospital on account of varix amounted to little more than 1 per 1,000, while no deaths appear under this head. Were the whole of these cases discharged as unfit, the proportion would be utterly insignificant. There are obviously, therefore, good grounds for stating that in this particular instance the recruiting of the army is conducted with due care, while it is equally clear either that a slightly varicose state of the veins of the legs may exist without interfering materially with the soldier's efficiency, or that varix rarely occurs during the soldier's service in the ranks. My own experience is in favour of the former view.

There can be no doubt, however, that a varicose state of the veins of the legs is a serious disability in a recruit, and that any relaxation of existing regulations in this direction would be a questionable proceeding, but it is more than probable that in the number of men rejected on account of this disability is included a considerable number of cases of blemishes having a close resemblance to that malady. Surgeons familiar with the appearances presented by the extremities of men accustomed to violent exertion, or obliged by the nature of their occupations to make great muscular efforts entailing sudden and powerful contraction of sheath-bound voluntary muscles, cannot have failed to observe the frequency with which a rupture of the sheath of such muscles take place, and the close resemblance which the protruded fibres of the muscle bears to that of a dilated vein. I have seen several cases of this description which had been set down as varix. Such blemishes are not disqualifications, however, and should not entail the rejection of a recruit. The finger placed over the tumour during the contraction of the muscle will readily detect its true nature. Under the term *varicose*, Mr. Marshall describes three different conditions of the veins of an extremity: 1st. "A network of superficial blue veins; 2ndly. A large size of the veins without the function of the valves being impaired; 3rdly. A preternatural dilatation of the veins with a failure of the valves." He does not refer to special forms of disease or degeneration of these vessels which would of necessity render a soldier unfit; but, with this exception, the above extract embraces all the points in connection with the veins likely to arise, and there can be no doubt that he is correct in describing the first and second as of little importance, while the third incapacitates a man for the army.

There are other regions in which a varicose state of the veins is of frequent occurrence, but they will be noticed subsequently. Before closing this section, however, it is necessary to allude briefly to the state of the abdominal circulation as indicated by the femoral vein, and also by the veins of the rectum. Obstruction to the free return of the blood to the heart frequently exists in the abdomen, and as a consequence produces congestion of the vessels below the point of obstruction. Enlargement of the veins external to the corresponding femoral rings in the one case, and hæmorrhoidal tumours round the anus in the other, are the obvious consequences, and when these conditions are found to exist in a recruit, they should cause his rejection.

IV. *Of the Osseous System.*

Of this system it is sufficient to say that symmetrical development must always be the rule, and as this will be judged of during the general survey implied in the foregoing remarks, the special deviations from this standard will at once attract notice. The surgeon's attention will be directed in this section to injuries and diseases of the osseous system, and of accidental malposition of its relative parts not disposed of under other sections of these remarks. Of the former, old fractures, particularly of the cranium, evidence of pre-existing disease such as caries of the bones of the extremities, nodes and callosities, or other indications of venereal disease affecting the bones as well as all tumours impeding the free motion of the muscles in their vicinity, should be considered sufficient causes of rejection. So also with old dislocations which have not been effectually reduced, as often happens at the elbow-joint, acromial end of clavicle, &c., the effects of which have been partially overcome by subsequent use of the part. These and such like displacements should always entail rejection, because men so affected are apt to represent such a disability as attended with so much pain as to render them unfit for any duty unusually distasteful to them, and in the face of such a cause few surgeons would feel justified in expressing an opinion involving a charge of malingering, although morally certain of its correctness.

The instructions do not make any special allusion to curvature of the spine, although "malformations of the chest and spine" appear in the Table of diseases and defects of recruits. There can be no doubt, however, that curvature of the spine to any marked degree is a disqualification, more particularly when *posterior*, or when the dorsal vertebræ are very prominent, as occurs in *round-shouldered* men. Such a defect existing in a man of 26 years of age does not admit of effectual remedy under any known system of drill, while attempts to correct the deviation from the natural standard by gymnastic training will generally be found to develop other and more serious defects before it has effected a cure.

Of *lateral curvature*, however, the same objection does not hold good. This malady, like the preceding one, is often the result of a particular trade or occupation, and when so produced is rarely a disqualification when not to a considerable extent, or accompanied by indications of constitutional weakness or scrofula. An appearance of lateral curvature frequently results from undue development of the muscles of one shoulder; but this will be readily detected by making the recruit stoop forward from the attitude of attention, stretching out his hands over his head, and curving the back till his fingers reach to the ground. A glance at the recruit's spine, when so bent, from before backwards, will enable the surgeon to estimate the extent of lateral curvature if it really exist.

Occasionally men are rejected on account of want of uniformity in length between the corresponding bones of the different extremities. When such cases present themselves, the surgeon should be careful to measure each bone separately, and to examine its shaft for indications of old fracture. When no trace of fracture can be found, and when there is no evidence of scrofulous disease resulting in exfoliation of bone in youth, the surgeon will be justified in suspecting that the apparent shortening is assumed, and should use those means well known to most medical officers of experience, to determine whether the disability really exists or not. If the shortening be detected during secondary examination, there is strong presumptive evidence in that fact alone that the recruit is malingering, and there is little doubt that many men succeed in this manner in freeing themselves from the consequences of a hasty determination.*

During the examination of these various grand structural divisions, and the subsequently described regional or specific portions of the body, the various glandular structures, as well as the "appearance of disposition to scrofula or phthisis," and other indications of unsound constitution and bad health, will necessarily attract attention, and influence the surgeon's conclusions in proportion to their importance. It is desirable, however, that he should not be satisfied with the *appearance* of a disposition to any given malady. Appearances are often deceptive, and in no cases more frequently so than in that of health; the word should, therefore, be studiously avoided by all surgeons as one which, like *tendency*, a kindred term, has no meaning or signification when used to describe a physical condition, the *existence* of which is to be the basis of his opinion as to the eligibility of the subject of it for Her Majesty's service.

Of other Points to be attended to.

The remaining heads to be considered range themselves naturally under the different "points to be attended to by the surgeon," into which the "Instructions" are divided; and—premising that the surgeon will do well to consider not only how far he may exercise his judgment in choosing men possessed of the physical capacity requisite for the endurance of toil, hardships, and exposure as well as of sufficient intelligence, but also likely to meet the requirements of other surgeons of experience having a special interest in keeping the standard of efficiency high—these points are:—

1. *That the Recruit is sufficiently intelligent.*—The Regulations do not provide

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* See Aitken "On the Growth of the Recruit" for much useful information on the growth of the bones, and the development of the muscles in relation to each other.

a standard by which a recruit's intelligence may be determined. Mr. Marshall fails to indicate even approximatively the *degree* of intelligence necessary, dismissing the matter with a caution to the surgeon not to be imposed upon by the alleged want of intelligence on the part of the recruit or his friends.

Staff-Surgeon Massy presumes "that an inability to comprehend, acquire, and retain knowledge sufficient for the requisite attainment of soldiers' duties is the appropriate definition for the disability under consideration;" and, after pointing out the necessity for a certain amount of intelligence, he adds,—"On the other hand, it does not follow because sufficient intelligence to acquire the easily-comprehended duties of a man in the ranks is absolutely requisite, that one should seek as a necessity for anything more."* Dr. Massy's demands cannot be considered excessive as a standard for the mental capacity of a recruit ten years ago; but when the rapidly progressive strides which have taken place in the development of firearms since that date, and the high standard of efficiency now required in the soldier are taken into consideration, the foregoing estimate of mental capacity seems to fall short of the requirements of the present day. It is also worthy of notice that much of the advantage to be derived from modern improvements in the mode of educating, training, dieting and clothing the soldier depends upon his capability of appreciating the objects with which they have been introduced. A reasoning being must see the connection between the means and the end before he can benefit to the full extent by their use. He must also feel that his individual comfort and happiness is the chief end to be obtained, before he will lend his willing co-operation without which all efforts to ameliorate his condition, and to elevate his mental and physical status will fail. He must be an active instrument in his regeneration.

How far the "few short questions" directed to be put to the recruit with a view of ascertaining whether he "is sufficiently intelligent" or not are calculated to determine this point, must be left to the discretion of the examining surgeon. That such an ordeal is not sufficient to exclude men who are mentally unfit—not maniacs, but demi-simpletons—appears to be more than probable; while a reference to the statistical portion of this and previous volumes will convince any one that, although the most rigid exclusiveness is exercised in matters of the least possible importance, such as varicocele and the like, the latitude as to mental capacity is almost unlimited.

The criminal and invaliding statistics of the army leave no doubt as to the frequent enlistment of the fatuous and imbecile, as well as the criminally vicious and lunatic; while such data as those given in Dr. Barron's report, extracts from which are published in this and previous volumes, afford presumptive evidence that a proportion, at least, of such men might be excluded from the service, were the development of the head, and the symmetry of its proportions as carefully examined and as dogmatically insisted on, as is customary in determining the form, development and symmetry of other organs and regions.†

2. *That his vision is good, clear, and strong; and that he has no defect of either the eye or its appendages.*—The demands of the service for increased visual precision in recruits have necessitated material alterations in the regulations on this point. At length a definite standard has been fixed upon, and means of testing the range and quality of vision calculated to meet this standard have been devised by Deputy Inspector-General Longmore of the Army Medical School, Netley, and are now available for that purpose. As Mr. Longmore's "Manual of Instructions for the Guidance of Army Surgeons

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* "Remarks on the Examination of Recruits." By H. H. Massy, A.B., M.D., Staff Surgeon, Army Medical Department, page 45.

† In the evidence given before the Royal Commission on Recruiting, at page 229, Colonel Jeffreys, Commanding the 5th Depôt Battalion, states, in reply to question 4676, "With regard to numbers, from my experience at Parkhurst, and I believe it is so in every regiment in the service, we should be better off with fewer men than with the present useless people that we get in such numbers. I have several men at Parkhurst whom I cannot send to the service companies; draft after draft passes by, and I cannot send them; they will never be soldiers; they are more mentally unfit than physically; a man is not exactly a maniac; he is not mad; but he is a sort of demi-simpleton."

in determining the Range and Quality of Vision of Recruits," is now in the hands of medical officers, a very brief notice of causes of rejection under this head will suffice.

No recruit should be passed as fit who cannot see well an object of moderate size at any distance up to 600 yards. It occasionally happened that myopic, or short-sighted men, in other respects very eligible recruits, were rejected on this account alone; and, till recently, this rule was so stringently applied that a considerable number of recruits were lost to the service because they could not see a small object distinctly up to 900 or 1,000 yards. This led to representations being made which resulted in the establishment of the rule just quoted, and which has been since more definitely laid down in a circular which will be found in another part of this volume. Any recruit who can see clearly an object equivalent to a black centre three feet in diameter on a white ground, at a distance of 600 yards, without the aid of glasses, should not be rejected on account of defective vision. A card has been devised by Mr. Longmore, on the surface of which dots one-fifth of an inch in diameter are arranged in irregular groups, and which, when placed 10 feet from the recruit, represents, for all practical purposes, the larger object at the greater distance, and suffices to test the *extent of range and degree of acuteness* of the recruit's vision now required by regulation.* It often happens, however, that other defects of the eye or its appendages are allowed to pass unheeded. It should not be forgotten, therefore, that this *card-test* is intended to demonstrate the non-existence, to a disqualifying extent, of defective vision alone; so that no other inference regarding the state of a recruit's *eyes* should be drawn from it. Morbid changes in the structures of the eye and its appendages must be looked for, and their nature and extent determined by other means. For full information on these various points, as well as for instruction in the use of the ophthalmoscope, convex and concave spectacles, and lenses in the optical case now issued to army surgeons, the reader is referred to Mr. Longmore's manual already alluded to, and to Dr. Snellen's Test-Types which accompany it.

In addition to good, clear, and strong vision, as interpreted with reference to the foregoing standard, the recruit should be *free from defects of either the eye or its appendages; any marks of disease in these organs* being just causes of rejection.

3.—*That his Hearing is Acute and Distinct.*—The existence of organic lesions in the organs of hearing is a disqualification, whether the hearing be affected or not; but in the absence of actual disease which can be readily recognized, there may be loss of hearing in one or both ears, and when such exists the recruit should be rejected. It is necessary to observe, as this disability is easily simulated, surgeons will do well to guard against assuming its existence because the recruit says he cannot hear distinctly. Recruiters will rarely enlist such men, the disability being one which they can readily detect; and where there is no tangible or perceptible cause for the alleged deafness, there will be, as a necessary consequence, presumptive evidence of an attempt to deceive.

It will occasionally happen that the hearing of one ear is defective, that of the other being good. To guard against passing such men, the surgeon should examine both ears very carefully, excluding sound from one while he tests the power of hearing of the other. In making this examination, more particularly in cases of suspected malingering, the surgeon should so manage that the recruit may not be aware of the object he has in view in placing the hand or other covering over the ear not under examination. The *acuteness* of hearing desirable in a recruit refers to the intelligent perception of sounds, rather than to the sensitiveness of the organ of hearing; the latter, when excessive, being rather an indication of disease than of health.

4. *Speech Free, Strong, and without Impediment.*—The requisite power and freedom of speech is readily determined by asking the recruit a few questions. Sometimes hesitation of speech or stammering is assumed, but an experienced surgeon will have little difficulty in detecting the fraud.

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* These test dot cards have been published, and may be procured from Mr. Bennett, High-street, Southampton, at a cost of two pence each, or post free for three postage-stamps.

The lips, tongue, palate, and pharynx should be free from disease or malformation, defects, or evidence of disease, in these being just causes of rejection.

5. *Teeth Good.*—Till lately no definite instructions as to what constituted a disqualification under this head existed. At no very distant date loss of any of the front teeth was considered a sufficient cause of rejection, and Mr. Marshall states that he had known "a healthy efficient recruit rejected upon medical inspection because he had lost *one incisor tooth* by accident, and others returned unfit because they had lost *two* molar teeth by caries." The instructions state that "loss of many teeth, or several being in a state of decay, or loss of front *teeth*," are just causes of rejection; so that as a matter of fact a surgeon would be justified in rejecting a recruit for the loss of two front teeth, were it not for a recent decision of the Director-General of the Army Medical Department, approved by His Royal Highness the Field-Marshal Commanding-in-Chief and the Secretary of State for War, in which it is laid down that loss or decay of six or more teeth should be considered a just cause of rejection. As the soldier is no longer required to bite his cartridge, front teeth have lost the pre-eminent importance previously assigned to them, and, except in so far as they affect a recruit's appearance or power of utterance, they are of no more importance than any of the others. It is obvious, however, that loss or decay of a considerable number of teeth at the age at which recruits are eligible is, *per se*, a strong indication of unsound health, and as such it is of great importance. The influence of such a state of the teeth on digestion, through imperfect mastication of food, is also worthy of consideration; for these and other reasons loss or decay of many teeth is still considered a disqualification.

There is no doubt, however, that want of due proportion between the size of the different teeth and the space in which each must stand, leads to overcrowding and consequent pressure of one against the other; and that from such causes alone a certain number of teeth may perish, and yet no disqualifying unsoundness of constitution exist. To meet this contingency, as well as to prevent the rejection of efficient recruits who may have lost two or three teeth by accident, the Director-General has decided that in future recruits shall not be liable to be rejected on account of defects of teeth unless they shall have *six* or more so affected. As this rule is applicable to boys and lads under twenty years of age, as well as to those of more mature development, it is worthy of consideration whether it ought not to be still farther extended, so as to provide for the probable decay of the wisdom teeth which appear at a later age, and which from their great liability to perish early, might, without injury, be ignored altogether.

6. *Throat healthy, and without Marks of Disease.*—This vague "instruction" appears to be chiefly intended to call the surgeon's attention to the state of the fauces generally. As, however, few have reached the age of eighteen without having suffered from affections of the throat, resulting in "marks of disease," such as enlarged or eroded tonsils and the like, it cannot be the intention of the instructions to exclude such cases. The omission of any allusion to such affections as being *just causes of rejection*, strengthens this view of the matter. It is probable that by the "throat" is intended the *fauces*, including the soft palate, posterior nares, and uvula; the tongue, velum-palati, tonsils, pillars of the fauces, and posterior wall of the pharynx; to these may be added the corresponding regions of the neck externally, in which evidence of unsound constitution, such as scrofulous cicatrices and enlarged glands, is most frequently and readily detected. Other diseases, such as tumours, affecting mastication, or causing difficulty of deglutition; evidence of scurvy, or the effects of mercury on the gums; impacted or obstructed eustachian tube, or parotid ducts; goitre or other glandular enlargements, may necessitate the rejection of a recruit; but in such cases the *degree* of the disability and its probable termination should be taken into consideration. A similar rule should hold good in the case of *appearances* of syphilis, the existence of which is a sufficient cause of rejection.

7. *Chest capacious and well-formed, with power of fully expanding the same.* There is an allusion to the *spirometer* in the instructions under this head, which implies that the capacity of the chest should be measured by that instrument; but as it is not generally available for that purpose, other methods must be adopted. The surgeon should bear in mind what has already been said

on the subject of chest-measurement, and, while giving due heed to the result of such measurements, he should form his opinion regarding the capacity and expansive power of the lungs from a careful examination of their physical condition, and from the general conformation of the thorax. The capacity of the lungs, or breathing power of the recruit, and not the *circumference* of the chest, is the point to be determined by the surgeon.

The instructions under this head are manifestly insufficient to prevent numbers of men with a strong disposition to phthisis being passed into the service, to pass out of it within a few months in an advanced stage of consumption. Surgeons who habitually exercise the greatest caution, and scrutinise most rigidly the physical aspect of the recruit for surgical defects or blemishes, have failed to detect this disposition in cases where its pre-existence has been demonstrated by the subsequent history of the men. Many young lads with a clear skin, a healthy throat, an arched foot, and a general freedom from surgical defects, and whose chest-measurement is stated by the recruiting officer to be sufficient, pass through the surgeon's hands readily and without much heed to the blue eye, the conjunctiva of milky whiteness, the pale face, the delicate conformation, the slender fingers, and the blue veins.

The chest, being free from deformity and of the requisite girth as to inches, little heed is paid to the clearness or freeness of the respiration, or the expansibility and general capacity of the lungs with reference to the quantity of air admitted during each inspiration. Disease may not actually exist in such cases, but sad experience proves that the *physical capacity requisite for the endurance of toil, hardships, and exposures* is also deficient, and that the elementary drill and training under the knapsack and cross-belts soon develops the *disposition* into the *disease* for which there are many causes but few cures. These remarks are fully borne out by the statistics of invaliding; by Dr. Maclean's remarks on the causes of invaliding during the first three years of the soldier's service, published in this volume; and by Dr. Massy, in his remarks on recruiting, already quoted. Space will not admit of a close examination of the *tuberculous diathesis* in this place, or of the many points arising out of this question; but this is of less consequence, as all medical officers, whether civil or military, have access to the valuable work of Professor Aitken, in the second edition of which will be found all that is known, not only regarding the tuberculous cachexia against which the recruiting surgeon should be especially on his guard, but also upon all the nicer points of pathology bearing upon this question of chest-capacity, as well as of the soundness and efficiency of contained organs, and their capability of resisting the deleterious influences to which they will be exposed during the earlier course of training, and the subsequent hardships of a soldier's life.

It may be well to observe here, however, that there are individual peculiarities connected with the skeleton which at once ought to excite suspicion. "These are narrowness of the thorax, especially at the expansion of the false ribs,—a condition, when combined with functional incapacity or inefficiency in the acts of respiration, of most characteristic significance."—"Such functional incapacity is indicated by the 'breathing being shorter,' with less breath-motion, the expiration is quick and forcible, and there is a minimum quantity of air taken in by the ordinary INspiration."*

That it is necessary to exclude recruits having a scrofulous or tubercular diathesis cannot be doubted; but that the ordinary mode of examination is calculated to secure this is very questionable. Many methods of testing the capacity and integrity of the lungs have been devised, among which may be mentioned the spirometers and stethometers of Hudson, Quain, and Sibson; but, although scientific investigations in connection with clinical researches may be advanced, and the diagnosis of certain diseases rendered more precise by the use of such instruments, the recruiting surgeon's time will not admit of these more minute researches, nor is this practically of much consequence to the public service. Freedom from disease,—or, in other words, a perfectly sound lung—is what is required in a recruit; and the existence of this can be ascertained more readily, and with sufficient certainty, by simpler means than those alluded to above. Free play of each rib, free and easy inspiration and expiration, equal expansion of both sides of chest, with the physical indications of a sound constitution, will generally suffice to determine the capacity or breathing-power of the recruit. In measuring the chest, a tape numbered to either end from the centre, will be found very convenient. By it can be readily ascertained the girth, the relative development of the different sides, and the expansive power of the chest. Should these be unsatisfactory, the surgeon's attention will be directed to the probable cause, and lead to further investigation. But it is not safe to trust to one method alone; percussion and auscultation should therefore be had recourse to, and no recruit should ever be passed as fit who has not been carefully examined in this way.

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* "Science and Practice of Medicine," by Wm. Aitken, M.D., 2nd edition, vol. 2, page 421.

8.—*Belly Lank and Compressed.*—A prominent or pendulous belly is a decided disqualification in a recruit. Obesity is unusual at the age at which men are eligible for enlistment, and pendulous abdomen rarely occurs except as the result of pre-existing disease, or of obesity which, having disappeared, leaves the abdominal walls relaxed and flabby.

A preternatural thinness of abdominal walls is frequently assigned as a cause of rejection, but unless when combined with relaxed abdominal rings, constituting predisposition to rupture, it will rarely be found to disqualify a recruit for the ordinary duties of a soldier.

In examining the abdominal walls due regard should be paid to the condition of the contained organs, any disease or enlargement of which is a disqualification in a recruit.

9.—*Spermatic Cords and Testes free from Disease.*—The unqualified nature of this "instruction" has led to a belief among army surgeons that it is essential to the efficiency of a soldier that his spermatic cords, testes, and scrotum should be perfectly normal in form and development, and absolutely free from disease. And this belief is strengthened by a subsequent paragraph in the instructions, which states that "disease of the spermatic cords or testes are just causes of rejection." How far such perfection in these organs is essential to the British soldier, is a question which has not, so far as I am aware, received any very satisfactory answer.

In examining the evidence which may be adduced on the subject with a view of determining the extent to which lesions in the genital organs are disqualifications in a soldier, it may be well to premise that it has generally been held by army surgeons that recruits having any disability which can by any possibility interfere with the free motion of the body or extremities, or which may give colour to the alleged existence of pain, should be rejected. This well-grounded opinion rests on the accumulated experience of the Department, and is supported by the fact that indifferent characters having such disabilities, never fail to allege their existence, either as an excuse for the non-performance of duty, or for the avoidance of punishment. So long as a soldier can demonstrate the existence of a disease in any organ, so long will it be impracticable to punish him for malingering to avoid his duty on the one hand, or the penalty of his offences on the other. It is this contingent circumstance, and not any well-grounded belief in the disqualifying nature of many alleged disabilities, which leads to the rejection of recruits for blemishes which in no way affect the efficiency of a willing soldier. The most frequent cause of rejection on account of diseases or defects under this head is varicocele. Out of 27,853 recruits inspected during 1860, in the recruiting districts alone, 7,128 were rejected, and of this number 424 were found unfit on account of diseases or defects of the genital organs other than venereal, 285 being cases of varicocele.

On referring to the records of sickness, mortality, and invaliding for the same periods the following results have been obtained:—Of 82,196 troops in the United Kingdom there were admitted into hospital, died, and invalided, on account of varicocele, as follows:—

Description of Troops.	Strength.	Admitted for Varicocele.	Died.	Invalided for Varicocele.
In the Household Cavalry ..	1,223	1	..	1
Cavalry of the Line ..	9,944	2	..	..
Royal Artillery	14,293	17	..	3
Military Train	1,657	2	..	1
Foot Guards	5,801	..	..	..
Infantry of the Line ..	49,278	9	..	2
Total	82,196	31	..	7

In 1861 there were 12,191 recruits examined at the head-quarters of recruiting districts, of whom 4,600 were found unfit for service the number rejected on account of diseases and defects of genital organs not venereal, being 327, of which 250 were cases of varicocele.

The sickness, mortality, and invaliding among the troops at home during the same period on account of varicocele, was as follows:—

Description of Troops.	Strength.	Admitted. for Varicocele.	Died.	Invalided. for Varicocele.
Household Cavalry ..	1,219	1	..	..
Cavalry	10,629	5	..	1
Royal Artillery	13,335	4	..	..
Military Train	1,817	..	..	..
Foot Guards	5,811	5	..	..
Infantry of the Line ..	48,689	16	..	6
Total	81,500	31	..	7

An analysis of the Tables of sickness, mortality, and invaliding among the troops serving abroad will be found to yield similar results; but enough has been stated to show either that this disease rarely becomes developed after enlistment to a degree which would disqualify a soldier for the service, or what is more probable, that the disability may, and very frequently does exist in the men of any arm of the service without necessitating their discharge as unfit. Varicocele is frequently accompanied by a relaxed state of scrotum, and an elongation of the spermatic cord of the affected side. When this state of parts exists the testicles are unavoidably subjected to much friction from the clothes, and liable to contusions and injuries from other causes, more particularly in the cavalry and artillery. Such a complication existing to any marked degree would most probably render necessary the discharge of a soldier from any arm of the service; but anything short of this will rarely be found to incapacitate an infantry soldier. It is obvious, therefore, that a recruit so affected should be rejected, although there is presumptive evidence to show that this disease does not increase to any great degree, or with marked rapidity, after the ages at which recruits usually enter the service. It is worthy of consideration, however, whether a slight degree of enlargement of the veins of the scrotum, or spermatic cord, in a recruit otherwise eligible, and who does not present the pendulous state of scrotum above described, should be considered a disqualification for the service. Many surgeons infer from the existence of varicocele a tendency to hæmorrhoids, as well as indulgence in habits which predispose to certain diseases of both body and mind. When the state of the veins indicates degeneration of their coats, the first is undoubtedly a well-founded opinion; evidence of disease in the coats of any venous trunk not attributable to accidental injury indicates a condition of the vascular system which disqualifies a soldier for service; but the other inference to which allusion has been made requires confirmation, which might possibly be obtained were the attention of medical men, more particularly those in charge of lunatic asylums, directed to the subject.

Sarcocele, when it exists to any appreciable degree, all forms of syphilis, or mutilations the result of syphilis, are disqualifying disabilities. Gonorrhœa, however, provided it be not complicated by other affections of those organs, is not a sufficient cause of rejection. Adventitious glandular structures, or supplementary testicles as they are sometimes called, are occasionally found in the scrotum. When not of considerable size, or affected by organic disease, they are rarely of any importance. During the examination of the scrotum the surgeon's attention should be directed to the condition of he glands in the groin, and of the perineum generally, any fistulous openings, or cicatrices of former openings in which should be carefully noted, and their cause ascertained, before passing the recruit so affected. It is rarely safe to pass men with marks of previous disease in these regions.

10. *No rupture or tendency to the same.*—The existence of a hernial protrusion through either abdominal ring, or in the localities where it usually occurs, is not difficult of detection. Not so a *tendency* to rupture, however, by which is understood a relaxed state of the inguinal canals, admitting of a ready protrusion of some portion of the abdominal viscera on any unusual exertion. It is to be regretted, that the use of the word *tendency* has not been abandoned; but the disability to which it points is of great importance, inasmuch as, being one of degree, much difference of opinion often arises as to the eligibility of recruits supposed to be so affected. The ordinary practice is to pass men as fit, in whom no unusual protrusive impulse is conveyed to the hand of the surgeon placed over the site of the abdominal rings,* during the act of coughing by the recruit, and after he has been required to walk and hop quickly on either leg alternately, his hands being above his head during the examination in order to put the abdominal muscles on the stretch, and so expose any preternatural weakness of the walls round the usual site of rupture. This test is practically a sufficient one, but as large abdominal rings may exist without being detected during such an examination, provided the canals be long, and the rings far separated from each other, some surgeons are in the habit of pushing the respective testicle into the canal, and should this be found practicable, the recruit is rejected on account of tendency to rupture. This method of testing the calibre of the inguinal rings is open to the objection that there is no definite relationship between the size of the testicle and the capacity of the ring, and that it is not possible to examine the internal ring in this way. As the real *tendency* to rupture in this region depends almost exclusively on the condition of the latter, and on the length and degree of obliquity of the canal, any method of examination not calculated to ascertain this point, will mislead.

Femoral or umbilical hernia is equally objectionable in a recruit; in the former case, however, a *tendency* to this disease will rarely be discoverable, while in the latter it is of comparatively little consequence. In examining recruits for rupture Mr. Marshall points out the necessity of always ascertaining the state of the *rings* after all other parts of the examination have been gone through, as it often happens that the protrusion of the intestine does not take place until towards the end of the inspection, and particularly after the recruit has been directed to put one knee on the ground. He also guards the surgeon against being deceived by a power possessed by some men of elevating the testicles close to the external ring, thus simulating rupture. The absence of the testicle from the scrotum will indicate the nature of this apparent defect.

Although the non-existence of rupture, or tendency to the same, is the point to be determined, *hernia, or weakness of the rings*, is the language in which causes of rejection under this head are described, and the surgeon should not reject a recruit for a *tendency* to rupture in whom a preternatural relaxation of the abdominal rings does not exist.

11. *Limbs well-formed and fully developed, with their natural and full power. Free and perfect motion of all the joints, without any weakness from sprains of the ankle or knee-joints. That there is no impediment to free action*

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* Mr. Longmore informs me that he always feels for the impulse with his finger within the *external* ring, so as to detect protrusion through the *internal* ring. He does not think the fingers placed *over the site* of the rings calculated to give the same amount of information.—T. C.

from wounds, fractures of bones, or other causes. That the feet and toes are well-formed, the former arched (not flat), and that the latter do not crowd upon each other, do not overlap, are not superabundant, and are without bunions or ganglions:—These instructions are so clear and explicit, that elucidation appears unnecessary. How far a recruit's statement that he has sprained his knee or his ankle should be admitted as evidence of weakness, is a point for the surgeon to determine. A recruit who assigns a sprain as the cause of an alleged weakness, has knowingly committed a fraud by enlisting, and the surgeon is bound, in justice to the interests of the service as well as of the recruiting staff, to satisfy himself that there is a real disability in such cases before rejecting him. To admit a recruit's statement as evidence in such a case would be to give every man the option of escaping the obligations under which he had, perhaps hastily, placed himself.

A prominence of the muscles on the inner aspect of the thighs, and the consequent roundness thus given to the lower extremities, is said to render a recruit unfit for *cavalry*, and surgeons of dragoons are averse to pass men so formed as fit, believing that they will be unable to master the details of mounted drill, and that they will be driven to hospital to avoid the constant training to which they would be subjected. There can be no doubt that recruits so affected are not well adapted for cavalry, and recruiting officers should be aware of this, and induce such men to enlist for infantry where the development in question would be of no consequence. This roundness of thigh must not be mistaken for the deformity known as *knock-knee*, which is quite as objectionable in an infantry as in a cavalry soldier.

The formation of the feet, and arrangement of the toes, are fruitful causes of rejection. Special attention is drawn to these points, as there is reason to believe many unexceptionable recruits are rejected on this account who would be perfectly efficient as soldiers. The question of fitness in such cases is often one of degree, but it is also one which is to some extent influenced by pre-conceived ideas, or departmental traditions. A reference to the statistical portions of this and previous volumes will show how seldom flatness of feet leads to the discharge of men from the service.

The reason usually assigned for rejecting men having flat feet, namely, that they are sure to break down during a march, does not find confirmation in these reports, and there is reason to believe that the inconvenience to which they are exposed during unusually protracted marches, is now more correctly referred to the shape and construction of their boots than of their feet. Much has been done of late years to remedy this evil, and it is hoped that the attention which has been given to the subject will secure for every soldier an easy well-fitting pair of boots adapted to the shape of his foot.

Admitting, however, that all has been done which can be accomplished in this way, it will still be necessary to reject recruits with deformed or badly formed feet, under which must be included all deviations from the natural shape which interfere with the free power of progression, or steadiness in movement. The conditions which constitute a disqualification under this head, and the anatomical peculiarities of flat and broad feet, are clearly and concisely stated by Director-General Gorcke, of the Prussian Medical Service, in the following extract, which I quote from Mr. Marshall's excellent treatise on recruiting:—"In the flat-foot the bones of the leg are for the most part natural; there is, however, an irregularity in the manner in which the bones are placed on the foot, and in the relative position of their distant extremities with respect to the bones of the tarsus. The inner ankle is very prominent, and is placed lower than usual. A hollow exists below the outer ankle of a greater or less extent, according to the degree of the deformity. The dorsum, or back of the foot, is not sufficiently arched; the foot is broader in the neighbourhood of the ankle than near to the toes; the inner side of the foot, which, in a well-formed person, is concave, is flat and sometimes convex. When a flat foot is placed on the ground, the sole projects so much on the inside that the finger cannot be introduced below it. A person with flat feet usually walks with his knees bent, and assumes an attitude like a man when he pushes forward a wheelbarrow. He rests on the inner side of the sole, and the usual degree of motion of the ankle-joint is impeded." . . . .

"By a very moderate degree of attention a flat foot may be easily distinguished from a broad foot. In the broad foot the bones of the leg are well placed upon the foot; the usual hollow exists under the inner portion of the sole; the back of the foot is arched, the foot is not disproportionately broad at the tarsus; the expansion of the foot commences with the bones of the metatarsus, and it is broadest near to the toes."

Flat feet as above defined are a disqualification; broad feet, on the contrary, usually indicate that their possessor is inured to walking, and consequently that he is well-adapted for military service.

Over-crowding of toes, or the existence of bunions, or ganglions, or extensive callosities on the soles of the feet, are stated to be causes of rejection, and are no doubt properly so considered when they exist to any great degree; but as they are generally the result of ill-fitting boots, there is a fair probability that they will, when not of long standing or great extent, prove of little consequence. Overlapping, or supernumerary toes is a disqualification in a recruit.

12.—*That there is full power, with free and perfect motion of the shoulder, elbow, and wrist joints, also of the hands and fingers:*—The hands and fingers are much exposed to injury and mutilation from accident, and when such conditions affect in any way the free and perfect motion of any joint necessarily brought into play in the handling of the rifle, or in the performance of any other duty, they should be deemed a disqualification in a recruit. The absence of a finger, or of any portion of either thumb, index, or middle finger, is generally considered a sufficient cause of rejection; but if the mutilation be slight and limited to the ring or little finger, the degree and not merely the existence of the defect will be for consideration. The loss of the last phalanx of either of these fingers should not disqualify a soldier for the performance of his duties, provided the power of the remaining joints is unaffected. The flexor tendons of the ring and little finger are often found contracted, the fingers being permanently bent inwards, as has been already noticed; such an affection disqualifies a soldier for the service.*

RE-EXAMINATION OF RECRUITS AFTER ATTESTATION.

This duty always devolves upon a Military Medical Officer, except in a few rare cases when a battalion may be temporarily in charge of a civil surgeon. From what has been already stated regarding the advantages resulting to the public from this practice of re-examination, it may be inferred that the surgeon appointed to perform this duty should give due heed to the main point of the soldier's physical fitness for the service, as determined by his judgment, based upon his knowledge and experience of what is essential in a recruit and that, finding he possesses a due degree of strength and development, as well as freedom from obviously disqualifying defects, he should be approved.

Should the surgeon be of opinion, however, that the recruit does not possess the above essential qualities, or that he has some disqualifying defect which may have been overlooked by the surgeon who first examined him, or which may have originated since such examination; or should the degree of any disqualification be such as, in his opinion, unfits the recruit for the service, he should apply for a medical board to determine the point at issue. The instructions do not lay down any definite rules for the guidance of such boards when so assembled, so that it will be for the board to express an opinion not only as to the existence or non-existence of the alleged disability, but also as to the eligibility or ineligibility of the recruit. In performing this duty boards should divest themselves of all technicalities and fine-drawn distinctions, and remembering that, although their chief duty is to protect the service against loss from the admission of unfit recruits, they are equally bound to protect the officers of the Recruiting Department from the loss which they will suffer should the recruit be rejected without good and sufficient reasons, and to guard their professional brethren from censure, and, probably, from loss, should they pronounce a recruit unfit on account of an alleged disability, the nature and extent of which might be a matter of opinion, or which might be assumed by him for the purpose of obtaining his freedom. Such cases are by no means uncommon, and there is much reason to believe that medical boards "are commonly more credulous than district surgeons, who find from experience that they are very liable to be deceived, if much dependence is placed upon the testimony of recruits regarding disabilities which have no obvious cause." (Marshall).

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* "I conceive no mutilation (of the hands) whatever could be admissible in a dragoon; though to a slight degree such is not necessarily altogether incompatible with the duties of an infantry soldier."—*Massy on the Examination of Recruits, page* 86.

While I write, the following case has been put into my hands; and although not exactly in point, it is so confirmatory of the general bearing of Mr. Marshall's remark, that it is given at length:—"The board, having carefully examined Private ———, find that he enlisted into the ——— in June, 1863, and that, at that time (according to his own statement) he had the free and perfect use of all his limbs; that there is a large and deep cicatrix, with agglutination of cellular and muscular tissue, in the centre of the outside of the right thigh, resulting from a compound fracture of the femur four years ago, and which he now positively asserts prevents him marching, though the muscles of the limb are well developed."

"The board are of opinion that he probably never will become an efficient soldier; but it appearing that hitherto he has not been under treatment for this alleged disability, they beg to recommend (especially as, if discharged, he may possibly be re-enlisted) that he be admitted into hospital and subjected to observation and treatment for the period of one month, and that, if then found to be inefficient, he be invalided and sent to ——— for final disposal."

It is not easy to reconcile the statements upon which the opinion of this board is based with each other, or the opinion with the recommendation of its members; possibly they contemplate the free use of the "cat" in his treatment.*

As it may be useful to illustrate, by a number of actual decisions, the views commonly held by medical boards called upon to determine the question of *fitness* of a recruit, the following instances have been selected from the records of the Recruiting Branch of the Army Medical Department. They are all cases in which recruits, primarily passed as fit by Medical Officers in the service, have been subsequently rejected by medical boards during the past year:—

1. Private James Ryan, 108th Foot,† is deemed ineligible for the service in consequence of "having the letter D attempted to be obliterated." The board, finding "that such obliteration exists," is of opinion that he "is unfit for the service, and not likely to be re-enlisted."

2. Private Frederick Fletcher, of the 75th Regiment, is considered ineligible in consequence of "marks of recent venereal ulcers on penis, cutaneous eruption; general appearance scrofulous and unhealthy," and is pronounced unfit by the board, which, however, is of opinion that he "is likely to be re-enlisted at some future period."

3. Private Thomas Adams, of same corps, is deemed ineligible on account of "varicocele of left testicle;" and the board find that "he suffers from the above, and is also flat-footed and slightly lame," and that he is "unfit for the service."

4. Private Michael Connell, 108th Regiment, is considered ineligible on account of "varicocele, with tendency to rupture on the left side, and apparent syphilitic cachexia," and the board, "finding that he has the above disabilities," reject him as "unfit for the service."

The existence of relaxed abdominal rings and the syphilitic cachexia being facts capable of determination, should have been decided by the board in this case. The use of language implying doubt should be avoided as much as possible in all proceedings of a judicial character entailing a reference to superior authority.

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* This man has since been discharged by a second board, on account of "a cicatrix and loss of muscular substance on the outer aspect of right thigh, said to be from compound fracture before enlistment—cannot re-enlist."

† It has been deemed advisable to give the name and regiment of the recruit, to show the branch of the service for which he has been deemed unfit. The originals of these boards are in the office of the Army Medical Department. The cause of unfitness and opinion of the board are copied verbatim, but the preamble is omitted for the sake of brevity.

5. Private George Keefe, Royal Artillery, is deemed ineligible "in consequence of loss of seven teeth, and tendency to varicose veins of both legs," and the board, "finding that he has the above," consider him "unfit."

6. Patrick Hassett, 94th Regiment, is deemed ineligible "in consequence of defective vision," and the board, "finding that he is myopic of both eyes," rejects him as unfit; but erase the certificate that he "is not likely to be re-enlisted."

7. Alexander James, 3rd Hussars, is deemed ineligible "in consequence of marks of cupping on both sides of the back of the neck," and the board, finding "that the above disability exists," considers him "unfit for the service."

8. Michael Clarke, 56th Regiment, is deemed ineligible "in consequence of crooked right leg at knee, and lame," and the board "find that the above disability exists, but the lameness is only slight, the affection being congenital, existing in a slighter degree in the other limb, also rendering the man knock-kneed," and is of opinion that he "is unfit for the service, and is not likely to be re-enlisted if discharged in consequence of the above disability."

These very remarkable "proceedings" are signed by a Deputy Inspector-General of Hospitals, and two Medical Officers of experience and standing in the service.

9. James Bradley, 19th Regiment, is deemed ineligible "in consequence of overlapping of little toe of right foot," and the board, "finding that the above-named disability does exist to an extent which would soon render him inefficient as a marching soldier, as no ammunition boot would ever fit him properly," is of opinion that he is "unfit for the service."

10. Henry Porter, 94th Regiment, originally passed by a civil surgeon, intermediately approved by a Surgeon-Major of a recruiting district, is deemed ineligible in consequence of impaired vision from a speck on the cornea of right eye," and the board, "finding that there is a diffuse patch of stationary opacity on the cornea of right eye, which must interfere with his power of vision," is of opinion that he is "unfit for the service."

11. J. McPolion, 15th Regiment, is deemed ineligible "in consequence of deafness," and the board, "finding that he is suffering from deafness to such an extent as to prevent his performing his duty as a soldier," is of opinion that he "is unfit for the service, and not likely to be re-enlisted if discharged, in consequence of the above disability."

12. John McGuire, 19th Regiment, is deemed ineligible "in consequence of disease of the chest, incipient phthisis, states he has had cough for six months; has been under treatment since 23rd of January; general sounds of chest now (February 6th) better, but some comparative dullness (over) right upper front; above second rib partial loss of respiratory murmur; prolonged expiration, audible over left upper front, more marked ten days ago," upon which the board "find that the pulmonary disease does not exist to a disqualifying extent, some of the physical signs being the effect of bronchitis, from which he is still suffering and undergoing treatment; but this man is the subject of convergent strabismus, posterior staphyloma, and diffuse choroiditis, more especially of the right eye, producing impaired vision. The disease being in an incipient stage, it might have been difficult to detect the defective vision without the use of instruments." He is found "unfit," and certified as "likely to be re-enlisted unless very carefully examined."

The saving clause appended to the opinion of the board was obviously and very properly introduced to relieve the medical officer who first examined this recruit from responsibility; but it is not easy to understand how a recruit, whose vision is stated to be impaired, and who is the subject of *convergent strabismus*, can be considered likely to be re-enlisted, although the cause of the impaired vision can only be determined by the aid of an ophthalmoscope.

13. Thomas Roberts, Royal Artillery, is considered ineligible on account of "valvular disease of the heart," which the board find "does exist," and which they certify to have "existed prior to enlistment."

14. Charles Henstridge, Royal Artillery, is deemed ineligible "in consequence of valvular (mitral) disease of the heart, loud musical murmurs audible through the chest in front and behind, especially at inner side of left nipple," upon which the board is "of opinion that the above-named recruit is unfit

for the service, and if discharged will not be likely to be re-enlisted, and further that the disability existed prior to enlistment."

15. George Allinson, Royal Artillery, is deemed ineligible for the service in consequence of "marks of leech-bites on right side, dulness on percussion below the ribs on same side, numerous scars on the trunk and limbs, probably of syphilitic origin. Tibia ill-shaped, unhealthy aspect. (Has evidently been a soldier.)" The board "find that the above-named disabilities exist; "that he is unfit for the service, and if discharged, will not be likely to re-enlist; and that the cause of inability existed prior to enlistment."

16. John West, Royal Artillery, is deemed ineligible on account of "bad varicocele of both spermatic cords,"and is pronounced "unfit" by the board.

17. Thomas Carrol, Royal Artillery, is deemed ineligible on account of "two molar teeth lost, laxity of left inguinal ring, varicocele of both spermatic cords," and is found "unfit" on these accounts.

18. George Baldon, Royal Artillery, is deemed ineligible on account of "flat feet, in-kneed of right knee, marks of (medical) treatment over the joint, laxity of both inguinal rings," and pronounced "unfit" by the board.

It is difficult to understand how a recruit having so many recognised causes of unfitness could have been passed by a surgeon of experience at a time when the "instructions" were rigidly enforced.

19. Robert Rice, Royal Artillery, is deemed ineligible on account of "varicocele of both cords, cardiac palpitation, ringworm, and flat feet," and found "unfit."

20. Frederick Hylands, 19th Regiment, is deemed ineligible on account of "lateral curvature of the spine, and want of muscular power in right leg," and is found "unfit" in consequence.

21. Patrick Farrell, 60th Rifles, is deemed ineligible "in consequence of being barely thirty-two inches round the chest, and not likely to fill out," and the board "finding that he is considerably under the chest measurement required by the regulations, and also of indifferent muscular growth," is of opinion that he "is unfit for the service, and ought not to be re-enlisted if discharged in consequence of the above defect."

This recruit should not have been brought before a medical board. When the surgeon who re-examined him found his chest-measurement was considerably below the standard, he should have reported the matter for the consideration of the military authorities, with whom the determination of this point rests. To assign "indifferent muscular growth" as a reason for rejection in such a case is to relieve the recruiting officer from the consequences of his own neglect, and to throw the responsibility which should rest on him on the shoulders of the medical officer.

22. Edward Beehan, late a private in the 43rd Regiment, is deemed ineligible on account of "defective vision," and the board "finding that he labours under short-sight to such a degree as to interfere with the performance of his duty as a soldier," pronounce him "unfit."

The surgeon who originally examined this man was evidently influenced by the fact of his having previously served, and probably took the existence of sufficient power of vision for granted.

23. James Parker, 13th Hussars, is deemed ineligible "in consequence of scrotal hernia on both sides," and the board "finding that he does labour under scrotal hernia on both sides," reject him as "unfit."

24. Samuel Lockey, 56th Regiment, is deemed ineligible on account "of weakness of left leg, and constitutional cachexia, probably of syphilitic origin," and the board "finding that he has syphilitic eruptions on the chest and back, with ulceration of the throat, and pustular itch eruption on the hands, &c., and so severe over the nates as to induce a degree of lameness," is of opinion that he "is unfit for the service, and may be re-enlisted if discharged in consequence of presenting no permanent marks of treatment, &c."

The President of this board being an administrative officer remarks, when forwarding the proceedings, that they "indicate, in my opinion, great carelessness on the part of the medical officer who originally passed him as fit," an opinion which is difficult to reconcile with the remark that he "may be re-enlisted."

25. Thomas William Burgess, 60th Rifles, is deemed ineligible for the

service "in consequence of deafness, especially of the right ear," and the board "finding that he suffers from chronic discharge from both ears, with ulceration of the meatus, and that his hearing is defective," pronounces him "unfit."

26. Alfred Burney, 60th Rifles, is deemed ineligible for the service "in consequence of only measuring 32½ inches round the chest," and the board "finding that he barely measures 33 inches, while the standard for Rifle Regiments is 34 inches," pronounces him "unfit."

This is another instance of a board failing to appreciate the bearing of the regulations, and consequently assuming jurisdiction on a point upon which they had no power to decide.

27. Alexander Mumford, 19th Hussars, deemed ineligible "in consequence of aged appearance, loss and decay of teeth, and varicose veins of legs," the board "finding that he has varicose veins of right leg, and loss of many teeth," rejects him as "unfit."

28. Henry Stretton, 27th Foot, is stated to be "affected, to the extent of impairment of vision, with strabismus," and rejected by the board.

29. Thomas Andrews, 19th Hussars, is deemed ineligible on account of "aged appearance, loss and decay of teeth, and varicose veins of legs," and is rejected by the board, which finds that "he has varicose veins of left leg, loss and irregularity of teeth."

The irregularity of teeth may have existed to a disqualifying extent, although it is not commonly considered a cause of unfitness in a recruit.

30. Patrick Sharkey, of the 19th Regiment, is deemed ineligible in consequence of "flat feet, and inordinate action of the heart," and the board "finding that the flatness of feet does not exist to any marked degree, but that there is at present inordinate action of the heart, and that altogether from his unhealthy appearance and the above-noticed affection of the heart, he is not likely to be efficient in the service," reject him as "unfit for the service; but if discharged he probably may be re-enlisted, as he bears no marks of treatment. The board are not prepared to say that the disabilities were apparent on enlistment."

31. John Brady, 102nd Regiment, is deemed ineligible "in consequence of disease of the cerebro-spinal axis with convulsive movements of upper part of body," and the board "finding that there is very slight lateral curvature of the spine, and muscular tremors of the upper extremities, which possibly may not be always present; also oscillation of the eye-balls and weakness of vision, it is quite possible that these affections being slight might be overlooked," is "of opinion that the above-named recruit is unfit for the service, and is likely to be re-enlisted if discharged in consequence of his not bearing marks of treatment."

32. Thomas Boyer, 23rd Foot, is pronounced ineligible on account of being "affected with strabismus, cannot see with right eye, very nearly ruptured on left side from great laxity of ring," and rejected by the board as "unfit."

33. Samuel Knott, 11th Hussars, is deemed ineligible "in consequence of being very delicate-looking and narrow-chested, with emaciation, highly strumous diathesis, and apparently affected with tubercular deposition," and the board "finding that he has a delicate appearance and narrow chest, with general muscular tenuity, but there is no evidence of tubercular deposition," pronounces him "unfit for the service," "and not likely to be re-enlisted, if discharged, in consequence of the small circumference of the chest, 30½ inches."

This recruit should have been reported to his commanding officer by the surgeon who re-examined him, to be disposed of under the General Order already quoted.

34. Thomas Jones, 11th Hussars, is found to be "in-kneed to the extent of deformity," and pronounced "unfit" in consequence.

35. Thomas G. Connor, 11th Hussars, is deemed ineligible "in consequence of speck in centre of right cornea, many teeth decayed, deafness of long standing following scarlatina, narrow-chested, of very strumous habit, and unhealthy appearance." And the board, "finding that he has a speck in the centre of the cornea of the right eye affecting the vision, and has also a contracted chest," rejects him as "unfit."

36. William Ashford, 4th Dragoon Guards, is rejected by a board in consequence of "loss of six molar teeth, and delicate frame of body."

37. Walter Burston, Royal Artillery, is deemed ineligible for the service in consequence of "the right mammary gland being enlarged to a considerable extent, and thereby calculated to be a source of inconvenience to him when equipped as a soldier." And the board, finding that the right mammary gland is "enlarged, and that he is suffering from inflammation of the organ," considers him "unfit for the service."

The board is unable to state whether the disease existed prior to enlistment; and the proceedings are accompanied by a protest from one of the members of the board, who states that he "is of opinion that recruit Walter Burston is fit for the service." It is not surprising to find a difference of opinion among the members of the board in this case; it is probable that a few days' treatment in hospital would have removed that difference, and possibly retained an efficient recruit in the service.

38. James McLernon, Royal Artillery, is deemed ineligible "in consequence of being in-kneed and of extremely delicate frame." And the board find "that the above conditions do exist;"—that he "is unfit," and "not likely to be re-enlisted," "and that the cause of inability existed prior to enlistment."

39. Robert Lilley, Royal Engineers, is deemed ineligible "in consequence of defective vision of right eye and malformation of left great toe." And the board, "finding that there is a distinct nebula (cloudiness) of cornea of right eye and marked deformity of the great toe of left foot—the latter disqualification is of long standing; the nebula of the cornea is quite evident to the unassisted eye of the examiner,"—is of opinion that he "is unfit for the service, and not likely to be re-enlisted, if discharged, in consequence of the above-named disabilities."

40. George Rich, Royal Artillery, is deemed ineligible "in consequence of old fracture and deformity of first and second fingers of right hand." And the board, "finding that he has deformity of first and second fingers of right hand from old fracture of the first joint" is of opinion that he "is unfit."

41. Richard Sweeney, Royal Artillery, is deemed ineligible for the service "in consequence of exaggerated impulse of the heart." And the board, finding "that the above condition does exist, with a bruit," is of opinion that he "is unfit for the service, and, if discharged, will not be likely to be re-enlisted; and that the cause of inability existed prior to enlistment."

42. John Smith, Royal Artillery, is deemed ineligible "in consequence of loss and decay of four molar, four bicuspid, and one incisor teeth." And the board, "finding that he does labour under the above disability," is of opinion that he is "unfit for the service."

43. Reuben Whaile, Royal Artillery, is deemed ineligible "in consequence of loss of three bicuspid and eight molar teeth," and the board, "finding that he has the above disability," reject him as "unfit."

44. Jefferson Davis, Royal Artillery, is deemed ineligible "on account of varicocele left side, and flat feet," and the board "find that the above disabilities do exist to a considerable extent," and reject him as "unfit for the service, and, if discharged, would not be likely to be re-enlisted, and that the causes of inability existed prior to enlistment."

45. Daniel Thompson, Royal Artillery, is deemed ineligible "in consequence of psoriasis of right leg behind;" and the board "find that he suffers from psoriasis, probably of syphilitic origin," and reject him as "unfit for the service, and will, if the disease be cured, be likely to be re-enlisted. The cause of inability existed prior to enlistment."

This board was requested to specify more precisely the nature and extent of the disability; and, in consequence, the members find, in addition to the foregoing, "a large patch of eruption of a severe nature on left leg. The disease has also developed itself on both arms. States that he suffered from syphilis prior to enlistment."

46. Thomas MacEwan, Royal Artillery, is deemed ineligible "in consequence of secondary syphilis;" and the board "find that the above disease does exist to a very great extent," and is of opinion that he "is unfit for the service, and if discharged, will not be likely to be re-enlisted, and that the cause of inability existed prior to enlistment."

47. John Downey, Royal Artillery, is deemed ineligible for the service "in consequence of anœmic brûit audible above clavicles, and deformity of left

elbow joint;" and the board "find that he has organic disease of the heart and deformity of left elbow-joint," and is of opinion that he "is unfit for the service, and if discharged, will not be likely to be re-enlisted, and that the causes of disability existed prior to enlistment."

48. Henry Hutchinson, Royal Artillery, is deemed ineligible, "in consequence of deformity with shortening of left thigh, resulting from fracture, and producing lameness;" and the board "find that the above conditions do exist," and is of opinion that he "is unfit for the service, and if discharged, will not be likely to be re-enlisted, and that the cause of disability existed prior to enlistment."

49. George Burke, 102nd Regiment, is deemed ineligible "in consequence of cicatrix of recent bubo in right groin, inflammation, infiltration, and thickening of scrotum same side;" and the board, "finding that he does labour under the above disability," considers him "unfit."

50. Edward Dodge, Royal Artillery, is deemed ineligible on account of "flat feet," and rejected by the board on that account.

51. John Dougherty, Royal Engineers, is deemed ineligible "in consequence of defective vision of both eyes—right chiefly affected; syphilitic eruption:" and the board, "finding that he has defective vision of both eyes, secondary syphilis, and dulness on percussion over apex of right lung," considers him "unfit:" "but he may possibly be re-enlisted."

52. George Lacey, Royal Engineers, is deemed ineligible "in consequence of defective and decayed molar teeth, and laxity of left inguinal ring;" and the board, "finding that he labours under defective and decayed molar teeth on both sides of the jaw, and extreme laxity of the left inguinal ring," rejects him as "unfit."

53. Edward Haskell, Royal Artillery, is deemed ineligible "in consequence of teeth generally decayed; two molars out in lower jaw; in upper maxilla left eye-tooth out, and adjacent bicuspids in a state of decay; and on the other, one bicuspid and two molars;" and the board, "finding that he has the above," rejects him as "unfit."

54. Allen McCall, 19th Hussars, is deemed ineligible "in consequence of extensive varix of right leg," and rejected as unfit by the board.

55. John Walker, 19th Hussars, is deemed ineligible "in consequence of defective vision of left eye;" and the board, "finding that he suffers from the effects of former inflammation and ulceration of the cornea of left eye," rejects him as "unfit for the service, and not likely to be re-enlisted if discharged, in consequence of a cicatrix of cornea of left eye."

56. Samuel Sheels, 109th Regiment, is deemed ineligible "in consequence of opacity of left cornea and defective vision;" and the board, "finding that he has impaired vision of both eyes, with slight opacity of right cornea, and cloudiness of left," considers him "unfit."

57. John Paton, 106th Regiment, is deemed ineligible "in consequence of phthisis;" "and, finding that he labours under the above disease," the board considers him "unfit for the service, and not likely to be re-enlisted if discharged, in consequence of disease of the lungs and general emaciation."

58. Joseph Stubbs, 61st Regiment, is deemed ineligible "in consequence of shortening of one foot by half-an-inch, and curvature of two toes of both feet;" and the board, "finding that he is suffering from the above-mentioned deformity," is of opinion that he "is unfit for the service, but is likely to be re-enlisted if discharged, in consequence of the deformity being not very apparent unless the attention is particularly brought to it."

There is something about the finding of this board specially worthy of notice. The rejection of a recruit for deviation from symmetry so slight as not to be noticed by three medical officers unless their attention be specially directed to it, gives some colour to the allegation that boards usually agree with the officer who objects to a recruit, and that they are apt to confirm his opinion no matter how trivial may be the alleged disability.

59. George Campbell, 19th Foot, is deemed ineligible "in consequence of opacity of the right cornea, the result of ulceration of old standing;" and the board, "finding that the sight of right eye is very defective from opacity of the cornea," considers him "unfit for the service, and if discharged, will not likely be re-enlisted."

60. Andrew Wilson, 2nd Dragoon Guards, is deemed ineligible "in consequence of numerous scrofulous scars on the neck, together with slight deformity of hip joint;" and the board, "finding that he labours under the above disability," is of opinion that he "is unfit for the service, and is not likely to be re-enlisted if discharged, in consequence of the disability before named."

61. Patrick Devilin, 107th Regiment, is deemed ineligible "in consequence of want of development and malformation of chest, and indications of chest-affection;" and the board, "finding that he is suffering from the above," considers him "quite unfit for the service, and not likely to be re-enlisted if discharged, in consequence of the above."

The very vague language in which the disability of this recruit was described rendered a reference to the President necessary, in order that the surgeon who originally passed him might be informed that he had been rejected on account of a specific disability. The president therefore supplemented the above by adding,—"namely, deficiency and hardness of respiratory murmur, and increased vocal resonance under right clavicle, with exaggerated breathing on the opposite side. The indications in question must have existed for some time before enlistment." Such terms as *indications of chest affection* should never be used by boards called upon to determine the question of a recruit's fitness for the service. They convey no definite information which will enable the confirming officer to judge of the responsibility incurred by the medical officer who first examined the recruit.

62. Henry Budden, 23rd Regiment, is deemed ineligible "in consequence of curvature of the spine, the convexity being directed backwards. There is also a lesser curvature laterally; two molar teeth out in lower jaw, and two decaying in the upper,—a weakly boy;" and the board, "finding that he has the above," considers him "unfit."

63. Robert Archer, 19th Foot, is deemed ineligible "in consequence of abnormal position of the heart, cardiac pulsation in the epigastrum," and the board, "finding that he has the above peculiarity," considers him "unfit for the service."

64. Frederick Priest, 4th Dragoon Guards, is deemed ineligible "in consequence of want of sufficient strength and muscular development, chest measurement being only 31 inches, weight 9 stone 2 pounds;" and the board, "finding that his muscular development is deficient, and chest measurement under 32 inches, together with malformation of both feet," is of opinion that he "is unfit."

65. John Peacock, 25th Regiment, is deemed ineligible "in consequence of disease of the heart—the recruit states that he has suffered for four years;—when examined great palpitation with abnormal sounds," and the board, "finding that he suffers from disease of the heart," considers him "unfit."

66. Patrick Gee, 108th Regiment, is deemed ineligible "in consequence of want of vision in right eye from sluggishness of the pupil, and he could not distinguish letters, figures, or dots on a paper within five or six feet of him," and the board, "finding that he is suffering from the above," rejects him as "unfit for the service."

67. William Brown, 60th Rifles, is deemed ineligible "in consequence of weakly conformation of body, flatness of chest, and irregularity of the heart's action," and the board "find that he does suffer from weakly conformation of body and flatness of chest. As this is apparently due to muscular tenuity from deficient nutrition, the result of a want of proper food, we are of opinion that the above-named recruit is at present unfit for the service, but is likely to be re-enlisted if discharged in consequence of the above disability."

68. Samuel Wakeling, Royal Artillery, is deemed ineligible "in consequence of varicocele of the left cord, above medium size," and the board, "finding that he has the above," rejects him as "unfit for the service."

69. Benjamin Haynes, Royal Artillery, is deemed ineligible "in consequence of varicose veins of left leg, and to some extent of the other; feet flat; myopia of right eye;" and the board, "finding that he has the above," rejects him as "unfit for the service."

70. Boy William Willis, 53rd Regiment, is deemed ineligible "in consequence of flat feet," and the board, "finding that he labours under the above disability," considers him "unfit for the service."

71. Henry Watts, Royal Engineers, is deemed ineligible "in consequence of protrusion and impulse at left inguinal ring," and rejected by the board, which finds "that he labours under the disability described."

72. Charles Tiplady, Royal Engineers, is deemed ineligible "in consequence of bad teeth; two molars out and another decayed on right, and two molars out on the left of lower jaw; one molar decayed on the left side of the upper; right shoulder higher than left; healthy-looking in other respects;" and the board, "finding that he has the above, and that his teeth generally are decayed," rejects him as "unfit for the service."

73. Abraham Lockett, Royal Artillery, is deemed ineligible "in consequence of impediment of speech to such an extent as to render him unable to challenge," and the board, "finding that he does labour under impediment of speech to the extent stated," rejects him as "unfit for the service."

74. John Lewis, Royal Engineers, is deemed ineligible "in consequence of relaxation of both inguinal rings, almost amounting to rupture on the right side," and the board, "finding that he suffers from great relaxation of both inguinal rings, especially the right," rejects him as "unfit."

75. James William Goodwin, Royal Engineers, is deemed ineligible "in consequence of defective vision," and the board, "finding that he is suffering from myopia," rejects him as "unfit."

76. John Pitt, 12th Regiment, is deemed ineligible "in consequence of defective vision," and the board, "finding that he suffers from defective vision of the right eye," is of opinion that he "is unfit for the service, and IS likely to be re-enlisted if discharged, in consequence of the obscure nature of his complaint." This is a remarkable *finding!*

77. James Jackson, Royal Engineers, is deemed ineligible "in consequence of intermission of the heart's action during exercise, first sound abnormal and roughened," and the board, "finding that he suffers from valvular disease of the heart," rejects him as "unfit."

78. George Baker, 20th Foot, is deemed ineligible "in consequence of a very large cicatrix (eight inches long by two and a-half) on outer part of right leg; acromial end of right clavicle being higher than the left;" and the board, "finding that he has the above," rejects him as "unfit."

79. Michael Spain, 36th Regiment, is deemed ineligible "in consequence of weak limbs, and want of muscular development in proportion to his height; left leg thicker than the right; evident weakness of right knee-joint, and knees fall in when made to walk," and the board, "finding that he has evident weakness of the limbs, but particularly of the lower extremities," considers him "unfit for the service, and, if discharged, may possibly re-enlist"!

80. John Hocter, 12th Regiment, is deemed ineligible "in consequence of weak abdominal walls; tending to hernia;" and the board, "finding that he suffers from weak abdominal rings, which probably will end in hernia," is of opinion that "he is unfit for the service, and IS likely to be re-enlisted, as the affection is very slight."

81. Henry McElroy, 12th Foot, is deemed ineligible "in consequence of chronic hepatitis, and marks of treatment for dysentery," and the board, "finding that he has marks of treatment for abdominal disease, and now labours under chronic hepatitis," considers him "unfit."

82. John Barlow, 50th Regiment, is deemed ineligible "in consequence of weak intellect, and marked with cupping on the back of the neck," and the board, "finding that he has marks of cupping on the nape of the neck," considers him "unfit for the service."

83. Josiah Charles Hobbins, 53rd Foot, is deemed ineligible "in consequence of myopia," and the board, "finding that he has the above," rejects him as "unfit."

At the time this recruit was examined, the range of vision required was supposed to comprise the capability of seeing the several parts of the service-targets at the full range of the rifle.

84. Frank Howe, 4th Hussars, is deemed ineligible "in consequence of the chest being contracted; the left side is expanded with difficulty, and the respiratory murmur almost inaudible;" and the board, "finding that he has the above," considers him "unfit."

85. Samuel Gibson, 4th Hussars, is deemed ineligible "in consequence of

incipient phthisis pulmonalis," and the board, "finding that he is labouring under the disability named," rejects him as "unfit."

86. John Waters, 4th Hussars, is deemed ineligible "in consequence of large indurated chancre on penis, ulceration of throat and nose, weakly state," and the board, "finding that he has an indurated cicatrix of a chancre, and disease of the mucous membrane of the nose and throat," is of opinion that he "is unfit for the service; but that if discharged may, after suitable treatment, possibly re-enlist, and be passed into the service."

87. Matthew Chambers, 4th Hussars, is deemed ineligible "in consequence of scrofula, ulcerated throat and nose," and the board, "finding that he has cicatrices of old abscesses in the neck, indicating a disposition to scrofula, and ulceration of the mucous membrane of the nose," considers him "unfit."

88. George Makepeace, 4th Hussars, is deemed ineligible "in consequence of disease of heart,—brûit with first sound," and the board, "finding that he has a brûit with the first sound, indicating disease of the heart," considers him "unfit for the service; but that, if discharged without marks of treatment, it is quite possible he may re-enlist, the cause of disability being obscure." There is a note at the foot of the proceedings to the following effect: "The president of the board is unable to detect the morbid sound alleged."

89. Jeremiah Howard, 67th Regiment, is deemed ineligible "in consequence of the apex of the heart, after exercise, impinging against the upper part of the epigastrum, while the chest is flat in shape," and the board, "finding that he has the above," rejects him as "unfit."

90. Thomas King, 45th Foot, is deemed ineligible "in consequence of enlargement of left epididymis, and cicatrices from buboes in either groin," and the board, "finding that he has the above to a disqualifying extent," rejects him as "unfit."

91. John King, 45th Regiment, is deemed ineligible "in consequence of enlargement and slightly tortuous condition of a vein inside right calf of leg and cicatrix in front of tibia," and the board, "finding that he has the above, to a disqualifying extent," rejects him as "unfit."

92. George Rogers, 11th Foot, is deemed ineligible "in consequence of weak vision of right eye, accelerated and irregular action of heart, with marks of treatment," and the board, "finding that he has weak vision of right eye (myopia), and irregularity of heart's action, with marks of former treatment over sternum, coupled with a delicate frame of body," is of opinion that he is "unfit for the service."

93. John McKenna, 12th Foot, is deemed ineligible "in consequence of defective vision," and the board, "finding that he labours under defective vision of right eye, caused by a severe blow of a brickbat on the 10th of March last, of which he bears the mark," rejects him as "unfit for the service; but is likely to be re-enlisted if discharged, in consequence of having no marks of treatment."

94. William Clarke, 6th Regiment, is deemed ineligible "in consequence of varicocele, left side," and the board, "finding that he labours under marked varicocele (otherwise a very eligible recruit)," rejects him as "unfit for the service, and not likely to be re-enlisted if discharged."

95. William Johnston, 6th Depôt Battalion, is deemed ineligible for the service "in consequence of height, $67\frac{3}{4}$ inches, chest measurement, $31\frac{1}{2}$ inches; conformation of chest and general appearance, phthisical, and finding that he suffers under decided want of stamina, and that his chest is below the standard measurement, ill-formed, and deficient in capacity, and at the present time, suffering as he does from bronchitis, he has not the power of expanding it. Although not now phthisical, he has the appearance of eventually becoming so. The board also consider him deficient in intelligence, and are of opinion that the above-named recruit is unfit for the service, and is not likely to be re-enlisted if discharged, in consequence of the above-named disabilities."

96. "The board having carefully examined William Jones, a recruit belonging to the 1st Battalion, 23rd Regiment, who was originally passed by ————————, and has been deemed ineligiblefor the service by ———————— in consequence of 'change of shape, and tenderness on motion of left hip-

joint,' and finding that there is a slight degree of lateral curvature of the spine, accompanied with shortening of the left lower extremity, and that the circumference of that thigh, and leg at the calf, is greater than that of the opposite limb, we are of opinion the above-named recruit is unfit for the service, but is likely to be re-enlisted if discharged, in consequence of the deformity under which he labours being perceptible only after very minute examination and measurements of the limb"!

97. Thomas Jackson, 21st Foot, is deemed ineligible "in consequence of incipient pulmonary disease and varicocele," and the board "finding that he is an emaciated and very delicate-looking lad, with a very rapid pulse, feeble respiration, and great vocal resonance in the upper portion of the lungs, and that he has bad varicocele of the left spermatic cord," rejects him as "unfit."

98. Robert William Baker, 14th Hussars, is deemed ineligible "in consequence of varicocele of left side, three teeth wanting, and three teeth extensively decayed in lower jaw, two teeth decayed in upper jaw," and the board "finding that he does labour under the above disabilities" rejects him as "unfit."

99. Thomas McMakin, 54th Regiment, is deemed ineligible for the service "in consequence of deficiency of chest measurement," and the board "finding that he measures only 31 inches round the chest, and his general physical appearance is slight, besides psora, there appears to be a chronic cutaneous eruption," is of opinion that he "is unfit for the service, and, if discharged, is not likely to be re-enlisted in consequence of the girth of chest being under that required by General Order No. 806, dated Horse Guards, 14th January, 1862."

This is the order which informs Medical Officers that the measurement of a recruit's chest is a matter to be determined by the Inspecting Field Officer and not by the surgeon!

100. William Strickland, Royal Artillery, is deemed ineligible "in consequence of a scar of syphilitic origin on right thigh, varicose veins at the back of both thighs," and the board "finding that he suffers from disease of the superficial veins of the lower extremities very generally and in the lumbar region as well," is of opinion that he "is unfit for the service, and is not likely to be re-enlisted if discharged in consequence of the disease of the veins, and that the cause of inability existed prior to enlistment."

Occasionally boards find men fit who have been deemed ineligible for the service by medical officers on approval, but judging from the very small number of cases reported* to the Director-General of the Army Medical Department, this is a rare occurrence. The following are illustrative instances:—

William Smith, Royal Artillery, is deemed ineligible "in consequence of extremely delicate appearance," and the board "finding that he is well formed, free from disease, and likely to grow out of the delicacy of appearance," is of opinion that he "is fit for the service."

Henry Gray, Royal Artillery, is deemed ineligible "in consequence of copper coloured eruption on skin supposed to be syphilitic, in every other respect an eligible recruit," and "finding that he has a slight patch of cutaneous eruption on right shoulder which the board considers to be of no consequence" he is pronounced "fit for the service."

William Leahy, 104th Regiment, is deemed ineligible "in consequence of marks of seton at the nape of the neck, marks of wound of left knee-joint, shortness of vision of left eye, and a general epileptic appearance," and the board, "finding that he, although bearing the marks above stated, does not suffer from sufficient evidence of ocular or mental disease to warrant his being rejected as unfit for the service," is of opinion that he "is fit"!

DECISION OF MEDICAL BOARDS FINAL.

The decision of a medical board is final, and consequently ought to be the result of mature deliberation and as free from ambiguity as possible. It is impossible not to observe that the language used in describing some of the disabilities in the instances above quoted is neither so clear nor so appropriate as might be expected from the members of a scientific profession; and although it is quite possible that this is attributable to the employment of uneducated clerks to write out the proceedings, it should not be forgotten that these documents pass through the hands of military men who will not fail to draw their own inferences from the manner in which a disability is described. It is also desirable that proceedings which are to guide others in forming an opinion, should be couched in language as clear, precise, and free from ambiguity as possible; and in no case is this of greater importance than such as are constantly arising out of the recruiting service. Almost every decision which entails the rejection of a recruit brings with it implied, if not expressed censure on the officer who first found him fit, and every recruit rejected on mere technical grounds is a loss to the State, as well as to the Recruiting Department upon which his expenses must fall if disallowed by the authorities at the War Office. These considerations should not induce boards to pass recruits who are manifestly *unfit* for the service, but they should secure a deliberate decision expressed in language calculated to carry conviction with it.

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* At page 103 of the Medical Regulations, the proceedings of boards of Medical Officers on recruits are directed to be made out "*in triplicate, two for the Medical Department, and one for the Commanding Officer.*" This applies to proceedings of Boards upon men found fit, as well as upon those found unfit; but there is reason to suppose it is disregarded in many instances.

Mr. Marshall, in his excellent treatise on recruiting, arranges the causes on account of which recruits are rejected under three heads or classes:—

1st. "Diseases or deformities which a Medical Officer, from his professional knowledge and acquaintance with the duties of soldiers, considers are infirmities which disqualify men for service in the army."

2nd. "Slight blemishes which do not disqualify a man for the army, but which an unwilling soldier may exaggerate, and allege that he is thereby rendered unfit for military duty."

3rd. "Unimportant deviations from symmetry, or slight variations from the usual form or condition of the body, technical or nominal blemishes which do not incapacitate a man for the army, or in the smallest degree impair his efficiency."

"Experienced surgeons will reject all recruits who come under the first two classes from a conviction that they render a man unfit or ineligible for the army; but those under the third head are frequently rejected from fear of responsibility, a dread of epistolary correspondence if objected to by regimental Medical Officers, and an ultimate loss of professional character."

These admirable and practical remarks should be carefully considered by every Medical Officer upon whom may devolve the important duty of "approving" recruits, as well as by all members of Medical Boards called upon to decide between the conflicting opinions of professional brethren, and the interests of the public.

The great discrepancies which occasionally occur in the statements of boards, and of the medical officers whose judgment is impugned by them, lead to a belief that the identity of the recruit appearing before them may in some instances be doubted. Medical boards on recruits should bear this in mind, and before giving an opinion, they should compare the man's description as recorded on the face of the attestation with the individual before them, for which purpose that document should always be submitted to the board. Such a measure would remove all doubt as to the *identity* of a recruit.

SURGICAL INSPECTION OF SOLDIERS ON RE-ENGAGEMENT.

In the Queen's Regulations for the Army, at page 188, it is directed that "if men desirous on the completion of their limited service, to renew the same, be prevented from so doing by disability, they are to be brought forward for discharge as invalids." The rejection of a soldier, therefore, who has completed his first term of enlistment, and who is willing to re-engage, involves two points—the loss of his service to the Army, and the expense incurred by the State in invaliding and pensioning him for the disability which renders him unfit, should he have contracted it in the service; and should it be attributable to the circumstances under which he was placed in the performance of his duties as a soldier.*

It is clear, therefore, that a soldier to whom the surgeon of his regiment refuses a certificate of fitness for service is in a different position from the recruit, and that in dealing with such cases the surgeon should set aside all idea of comparison—the regulations for his guidance in the one case being quite inapplicable to the other. A soldier who has already served ten years, and who is considered fit to re-enlist by his commanding officer, is not only a valuable man of tried mental and physical capacity, but he is also very probably a man upon whom the effects of ten years' hardship, toil, and exposure are visible; to ignore the former highly-valuable proof of physical fitness because the latter may be traced in a blemish or defect which does not actually disqualify, would be a serious error, and yet there is some reason to fear that, in the absence of instructions, such a contingency may happen more particularly during the next year, when large numbers of men will have completed the first period of service for which they engaged.

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* For instructions regarding the re-engagement of time-expired men, see Circular No. 865, dated War Office, 6th June, 1864; and Circular Memorandum No. 298, Horse Guards, 19th May, 1864, reprinted as a note at page 556.

Physical fitness for active service, and not freedom from those defects for which it is customary to reject recruits, should be the rule in this case, and regimental surgeons will consult the best interests of the service by passing as fit every soldier who, having completed ten years' good service, is free from any disease or disability which would necessitate his being left behind were the regiment ordered on service abroad, or required to take the field against an enemy. The actual existence of rupture, chronic disease of the viscera, secondary syphilis, rheumatism, extensive varicose veins of the legs and the like, would of necessity cause the rejection of men suffering from such ailments; but marks of medical treatment, traces of previous disease now no longer in existence, unimportant affections of spermatic cords or testes, cicatrices, marks of old wounds, loss of teeth and the like, would have an entirely different signification when recognized in the veteran of ten years' approved service, and the recruit respectively. The soldier who offers to re-engage in his old corps, or in any other which may be open to him before the expiration of his first term of service, and whose vision is good, hearing acute, lungs, heart, and liver free from organic disease, should not be rejected on account of minor defects or trivial ailments which do not interfere with the efficient performance of his duties, or entail a probability of doing so at no distant date.

Should the soldier, however, claim his discharge at the termination of his first period of service, and should he subsequently wish to re-engage under the conditions of the Royal Warrant of 6th June, 1864, it will be the duty of the surgeon to examine him in the usual manner, with a view to determine whether there is a fair probability that he will be able to serve as an effective soldier for a further period of eleven years. Marks of medical treatment in the case of a soldier who produces his parchment certificate of discharge and good character are of less importance than in other cases, but they should lead to a very careful examination of the organs for affections of which the treatment was had recourse to. Should these be perfectly sound the marks lose their significance, although it is not advisable to re-engage men who, having previously served in the *tropics*, show extensive marks of leeches over the abdomen or thorax. Hepatitis, dysentery, dyspepsia, derangement of the heart's action, &c., having once originated in a tropical climate are very apt to recur; and so long as any doubt rests on the mind of the surgeon regarding the previous medical history of a recruit so marked, he will act wisely in rejecting him. Other physical defects and blemishes must be similarly considered and disposed of, but the surgeon should remember that it is always suspicious when a soldier, having taken his discharge from one regiment wishes to re-enlist into another without being either able or willing to assign a valid reason for the preference; while, the reason being satisfactory and established on reliable evidence, there will be little difficulty in determining the point of fitness.

SURGICAL INSPECTION OF SOLDIERS WHO VOLUNTEER FROM ONE REGIMENT TO ANOTHER.

Occasionally regiments and depôts at home are required to give volunteers to other corps, and in the absence of any special instructions to the contrary, medical officers finding them fit for service in one regiment did not hesitate to certify to their fitness for another without much regard being paid to the men's previous medical history, or to the future demands which might be made on them, while the surgeon of the corps to which the soldier volunteered was naturally averse to receive any man whose previous medical history, or present appearance threw the slightest doubt on the question of fitness. It was, therefore, determined by the authorities, in order to avoid misunderstandings and unnecessary expense, that no soldier should be permitted to volunteer unless perfectly efficient; and in order that medical officers might have definite instructions for their guidance, the Director-General addressed a circular letter to each, in which he directed them to take as their guide, in the examination of such men, the instructions for the surgical inspection of recruits. The question of rejection on volunteering is of little consequence either to the soldier or to the service, whereas if found unfit on joining his new regiment much unnecessary expense will have been incurred. Strictness, therefore, in this case is not only advisable but economical.

Medical boards are occasionally called upon to give an opinion regarding the fitness for service of men who have been so transferred from one regiment to another as well as in cases of soldiers wishing to re-enlist. In all such cases the members should take fitness for active service as their standard of efficiency. The existence of a defect or blemish should be noted, but the board should also determine whether such defect or blemish unfits the soldier for the performance of his duties, and if it does not they should find him fit. Above all, boards should express a definite opinion either one way or the other, and in such language as will enable the authorities, both military and medical, to understand the grounds upon which their decision is based.*

ARMY MEDICAL SCHOOL.

The fifth session of the Army Medical School commenced on the 1st of October 1862, and terminated with the usual examination in February 1863.

Twenty-seven candidates for commissions (together with five medical officers who were specially permitted to avail themselves of the advantage of the institution)† attended the courses of lectures and practical instruction in the various branches taught at the School.

It is gratifying to be able to speak favourably of the conduct, diligence, and attainments of all the candidates.

Having previously competed for admission by a public examination at Chelsea in August 1862, they finally established their claims to the order of precedence in which they were gazetted after a further competition at Chatham.

The combined results of the marks gained in these two examinations are given below.

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* Since these observations were written, the following Circular Memorandum has been issued by the Adjutant-General:—

E. H. Circular Memorandum.

(Addressed to the Army at Home and Abroad.)

General No. 298. Horse Guards, S.W., 19th May, 1864.

Re-engagement of Soldiers.

1—(1864).

His Royal Highness the Field Marshal Commanding-in-Chief, considering that soldiers wishing to re-engage before the expiration of their first term of service, should not be rejected on account of minor defects or trivial ailments, which do not interfere with the efficient performance of their duties, or entail a probability of so doing within the period for which they re-engage, calls the attention of Commanding Officers to the annexed form of certificate, to be furnished by Surgeons of the Corps in which soldiers complete their first period of service, which Certificate is to be considered final as far as their physical fitness is concerned.

By Command,

James Yorke Scarlett, Adjutant-General.

I certify that I have carefully examined Private A B of the Regiment, who wishes to re-engage for the term of years; and that he is free from rupture, organic disease, or other ailment likely to interfere with the efficient performance of his duty during the period for which he proposes to re-engage; and I am of opinion that he is in every respect fit for service at home or abroad.

† Surgeon H. P. Franklin, 1st Batt., 10th Foot; Staff Assistant Surgeons A. Bryson, E. Hiffernan, W. Sharpe; Assistant-Surgeon H. J. Stanley, H. P.

OMBINED RESULT of the London Examination in August, 1862, and of the Chatham Examination in February 1863.

Names of Candidates arranged in Order of Merit, with the Total Numbers of Marks.

Order of Merit, as finally settled.	Names arranged in the Order of Merit for both Examinations.	Total Number of Marks. Max. 7,000.	Order of Merit, as finally settled.	Names arranged in the Order of Merit for both Examinations.	Total Number of Marks. Max. 7,000.
1	D. Mackie	5,585	15	S. Flood	3,685
2	W. G. Ross	4,847	16	C. A. Maunsell	3,640
3	R. W. Hare	4,603	17	N. Carter	3,610
4	C. S. Close	4,430	18	J. L. Curtiss W. Ffolliott	3,540
5	W. H. T. Power	4,375			
6	G. N. Irvine	4,315	20	W. M. Thursfield	3,492
7	W. H. B. Clapp	4,077	21	W. K. Cumming	3,410
8	J. M. Waters	4,055	22	A. Hall	3,310
9	J. Dewar	3,990	23	J. Rutherford	3,290
10	C. M. Douglas	3,863	24	F. B. Scott	3,077
11	B. Reed	3,805	25	T. McD. O'Farrell	3,002
12	F. H. Dunbar	3,768	26	J. Langdon	2,975
13	J. Fannin	3,725	27	J. Ashton	2,678
14	J. H. Oliver	3,720			

CHELSEA EXAMINATION 1862.

QUESTIONS ON ANATOMY AND PHYSIOLOGY.

1. The abdomen having been opened, describe the dissection required to expose the *duodenum* and *pancreas*, and give a full account of the form, relations, structure, and physiological functions of these organs. Notice also the parts brought into view when they are removed.

2. Give the dissection required to expose the submaxillary and the sublingual glands and their ducts, noticing all the parts met with in the course of the dissection. Also give an account of the structure of the glands, and of the composition and physiological properties of their secretions, noticing how far the latter agree with or differ from those of the parotid secretion.

3. Describe the minute structure and functions, so far as they have been determined by experiments, of the spinal cord and medulla oblongata.

4. Describe the origin, structure, functions, and relations to the embryo of the *placenta*, *allantois*, *amnion*, and *umbilical vesicle*, in the human subject.

5. Describe a typical vertebra in the language employed by Professor Owen, and point out, in accordance with this, the homologies of the *atlas*, *axis*, and *third* cervical vertebra.

QUESTIONS ON SURGERY.

1. Describe the several affections of the Inguinal Glands, connected with primary venereal sores, and the treatment proper for each.

2. A man, while smoking, fell, and the stem of his tobacco-pipe was driven backwards and outwards through one of his tonsils, and was broken off short. Considerable arterial bleeding ensued, but ceased spontaneously before the man was brought to the hospital, with the piece of pipe still sticking in the wound. What should be done in such a case?

3. In the case of a patient with fracture of the spine, and complete crushing of the spinal cord, in the lower dorsal region, what evils may be expected to ensue in the paralysed parts, and how may they best be prevented, or remedied if they occur?

4. Describe the characters, during life and after death, of the most frequent form of cancer of the rectum, and the best means of palliating the symptoms connected with it.

5. Describe the principal diseases of the bursa over the patella, and the proper modes of treating them.

6. What are the chief causes of death after lithotomy, and in what cases

would you prefer lithotrity to that operation? State your reasons for the preference.

7. Describe the principal morbid changes to which articular cartilages are liable.

Questions on Natural History, &c.

Five or more of the following Questions to be Answered.

1. Explain the terms Root, Rhizome, Tuber, Corm, Bulb, and give examples of each used in medicine.

2. What are the botanical characters of the genus Cinchona, where is it found, and which species are most valuable?

3. Enumerate the vegetable drastic purgatives, and the countries from whence they are procured.

4. What are the chief pharmaceutical products of the Malayan Archipelago?

5. Give the botanical characters of the orders Polygoneæ, Piperaceæ, Solaneæ, and Gentianeæ.

6. Contrast the respiratory apparatus in Fishes, Amphibia, and Reptiles.

7. To what orders of the class Mammalia do the Cat, Horse, Camel, Pig, and Elephant belong, and what are the characters of those orders?

8. Describe the anatomy and metamorphoses of the Tape-worm.

9. What are the principal forms of Carbon, and what are their physical characters?

10. What are the microscopic characters of Yeast, Starch, Milk, Blood?

11. What are the principal sources of Ammonia, and what are its properties?

12. Define tersely the terms Decomposition, Oxydizing, Dimorphism, Deflagration, Galvanism, Fusion, Filtration, Fermentation, Putrefaction, Panification.

Questions on Medicine.

1. What are the symptoms produced by complete embolism of the middle cerebral artery on the right side? What are the conditions in other organs which usually precede such an attack?

2. What do you mean by Acute Tuberculosis? Give the symptoms and post-mortem appearances of a well marked case.

3. The following case is recorded by Dr. Graves—

A man was admitted into hosospital with cough, dyspnœa, and œdema of the left side of the face and of the left arm. The left jugular vein was enlarged, and very prominent. On stethoscopic examination, in spite of the cough and dyspnœa, there was no signs indicating any affection of the lungs. The heart was in its proper place and without murmurs. Above the heart, however, in the left sternal region, there was dulness on percussion, and a systolic sawing murmur; there was no bulging, or pulsation.

Write a full commentary on this case, and discuss every point above mentioned.

4. What are symptoms of death of the child in utero? How would you treat such a case?

5. How would you give chloroform? What are the dangers you would try to guard against, and how would you treat any accidents which might occur?

6. Enumerate the chief vegetable astringents, and state in what diseases they are used.

ARMY MEDICAL SCHOOL EXAMINATIONS.

I.—Military Medicine.

1. What do you understand by the term Malaria? Describe the conditions under which it is generated, the forms of fever it produces, its influence on the fluids and solids of the human system, and the manner in which this poison modifies and alters the type, progress, and phenomena of tropical diseases generally.

2. Describe the symptoms in a case of uncomplicated remittent fever. Show where they differ from, and where they resemble, those of true yellow fever, the organs most prone to suffer in the course of the disease, the tendency to

death, with a sketch of the leading principles of treatment, and mode of using the therapeutic agent most relied on in the cure of the disease.

3. Give a definition of dysentery, pointing out the various forms of the disease, and the circumstances which determine the development of each. Then describe the symptoms, pathology, and treatment of (*a*) uncomplicated sthenic, and (*b*) malignant dysentery of camps.

Practical Examination.

You are required to write concisely a history of the case before you, your diagnosis, prognosis, the probable effects of treatment, and the influence of the disease (or injury) on the man's fitness for service as a soldier.

II.—MILITARY AND CLINICAL SURGERY.

1. Name concisely the characteristic features of the various kinds of wounds, punctured, incised, lacerated, and gunshot, caused by the implements of warfare. Select any class of such injuries you choose for the purpose of illustrating the manner in which the treatment proper in civil hospitals may have to be modified in field hospitals, owing to the circumstances in which troops are usually placed in campaigning. Also enumerate the chief consecutive accidents which have to be guarded against in field hospitals where many wounded are placed together.

2. Name the symptoms of a perforating bullet-wound of the lung, and describe the natural process of the cure in case of recovery. State whether similar symptoms may be presented by other injuries, and if so, name what those injuries are.

3. Name the eight books and the registers which the Medical Regulations require to be kept at every regimental hospital by the Medical Officer in charge. Describe briefly the purpose of each book, and the regulated manner in which its entries are ordered to be recorded.

Practical Examination.

Same as in medicine, *mutatis mutandis.*

III.—HYGIENE.

1. State precisely how, and to what extent, air is vitiated by respiration and cutaneous transpiration, what quantity of air is required by a healthy adult in a given time, and how this air can be best supplied.

2. What are the principal impurities of drinking water, and what effects do they produce?

3. What are the weights of the accoutrements of the infantry soldier, and what effects do ill-adjusted weights produce?

4. What are the chief diseases causing men to go into hospital on home service, and in the three Mediterranean stations; and how may these diseases e prevented?

Practical Examination.

1st day. Examination of water and beer chemically; examination of a mixture of starches microscopically.

2nd day. Examination of milk and lemon juice chemically; examination of chicory microscopically.

IV.—PATHOLOGY.

1. Describe in detail the method of opening a dead body for the purpose of making a post-mortem examination, and the methods, or incisions required, for removing all the viscera from their respective cavities in such a condition that their morbid states and relations may best be seen.

2. State the average height of "growing lads" at the age of eighteen, and of "men" at the age of twenty-five to thirty, as determined by accurate measurements.

3. Enumerate, by name, the bones of the human skeleton which are incomplete at the age of eighteen. Describe in how far they are incomplete or unfinished as to growth, and the events which take place to complete the skeleton between the ages of seventeen and twenty-five.

4. Explain the pathological meaning of the terms "venereal" and "syphilis."

5. Mention the points which are to be specially ascertained and recorded in the pathological observation and description of syphilitic sores or ulcers.

Practical Examination.

1. Describe the lesions which are shown by the preparations before you and numbered respectively 1, 2, 3, 4, and 5.
2. Describe how the lesions in Nos. 1, 2, 3, and 4 may have originated.
3. Examine microscopically the specimen of urine in the test tubes before you, and state its microscopic contents.
4. Examine microscopically the material in the gallipots before you, and state what it is.
5. Determine the magnifying power of the combination of lenses in the large microscope.

CIRCULARS, GENERAL ORDERS, MEMORANDA, &c.,

Having Reference to the Officers of the Army Medical Department, Issued during 1862.

General Order.

Recruiting
1—(1862).

Horse Guards, S.W., 14th January, 1862.

The accompanying Schedule, showing the age and standard, and levy-money allowed for the enlistment of men, lads, and boys for Cavalry, Royal Artillery, Royal Engineers, and Infantry of the Line, having received the approval of the General Commanding-in-Chief, His Royal Highness directs that the Regulations herein laid down be strictly adhered to until further orders.

By command of His Royal Highness the General Commanding-in-Chief,

James Yorke Scarlett, Adjutant-General.

Cavalry.

		Height	
Heavy.			
4th Dragoon Guards		From 5 ft. 8 in. to 5 ft. 11 in.	Age not under 18, nor exceeding 25 Years.
5th " "			
1st Dragoons			
2nd "			
Medium.			
1st Dragoon Guards		From 5 ft. 7 in. to 5 ft. 9 in.	
2nd " "			
3rd " "			
6th " "			
7th " "			
5th Lancers			
6th Dragoons			
9th Lancers			
12th "			
16th "			
17th "			
Light.			
3rd Hussars	late Light Dragoons.	From 5 ft. 6 in. to 5 ft. 8 in.	
4th "			
7th "			
8th "			
10th "			
11th "			
13th "	late Light Dragoons		
14th "			
15th "			
18th "			
19th "			
20th "			
21st "			

Chest measurement of cavalry recruits:—If 5 feet 6, and under 5 feet 8, 33 inches; 5 feet 8, and under 5 feet 10, 34 inches; 5 feet 10 and upwards, 35 inches.

MILITARY TRAIN.

Height, from 5 feet 3 to 5 feet 6 inches. Age, from 18 to 25 years. Chest measurement, 34 inches and upwards.

ROYAL ARTILLERY.

For Gunners.—Age, from 18 to 25 years. Height, 5 feet 7 inches and upwards. Chest measurement—If under 5 feet 8, 33 inches; 5 feet 8, and under 5 feet 10, 34 inches; 5 feet 10 and upwards, 35 inches. Growing lads from 17, but under 18 years of age, may be taken from 5 feet 6 inches.

For Drivers.—Age, 18 to 25 years. Height, 5 feet 4 to 5 feet 6 inches. Size round chest, 34 inches and upwards.

Grooms, farm-labourers, and others of the like class, who have been accustomed to the care and management of horses, and who may not quite fulfil all the above conditions, but who, from their appearance, are likely to become good drivers, will be enlisted on special application being made to the Adjutant-General, through the Inspecting Field Officers of Districts, or in the case of a head-quarter recruit, through the Deputy Adjutant-General, Royal Artillery

For Artificers.—Blacksmiths, wheelwrights, and carpenters, collar and harness-makers, who are likely to become useful artificers, may be enlisted from 5 feet 6 and upwards.

ROYAL ENGINEERS.

For Sappers.—Age, from 18 to 25 years. Height, 5 feet 6 inches and upwards. Chest measurement the same as for gunners of the Royal Artillery. They must be men of good character, and able to read and write, and must have been brought up to, or served their apprenticeship as carpenters and joiners, cabinet-makers, stonecutters, builders, bricklayers, blacksmiths, millwrights, wheelers, coopers, painters and glaziers, plumbers. Engine-fitters are not to be enlisted as blacksmiths. Jobbing smiths or farriers only are to be enlisted who can work at the forge.

The utmost care is to be taken in the enlistment of tradesmen. None but good artificers must be taken, and their qualifications must be ascertained by actual trial in the trades to which they profess to have been brought up; or if this be impracticable, such testimonials must be obtained from their late employers as will fully satisfy the officers of their skill and acquirements.

Men of other trades required only in limited numbers, such as miners, shoemakers, printers, collar and harness makers, clerks, surveyors, draughtsmen, photographers, architects, engineers, tailors, will be enlisted on special application being made to the Adjutant-General, through the Inspecting Field Officers of districts, or in the case of head-quarter recruits, through the Assistant Adjutant-General, Royal Engineers.

For Drivers.—Age, 18 to 25 years. Height, 5 feet 4 inches to 5 feet 6 inches. Size round chest, 34 inches and upwards. Men accustomed to the care and management of horses are preferable to others; special application, however, must be made to the Adjutant-General, through Inspecting Field Officers of districts, or, in the case of head-quarter recruits, through the Assistant-Adjutant General, Royal Engineers, before any men are enlisted for drivers, there being but one troop in the Engineers, in which vacancies seldom occur.

INFANTRY.

Height, from 5 feet 6 inches and upwards, and between the ages of 17 and 25 years.

Infantry in India, China, New South Wales, and St. Helena.—Height from 5 feet 6 inches and upwards, and not under 18 years of age, nor above 25.

60*th Regiment, and Rifle Brigade.*—Height, 5 feet 6, and upwards. Chest measurement, 34 inches.

Chest measurement for Infantry (Rifle Regiments excepted) recruits of 5 feet 6 and upwards, the same as for gunners, Royal Artillery.

The recruit is to be measured round the chest in a line over the nipples, with his arms placed straight above his head, the backs of the hands touching each other, and the edges of the feet together, and at the same time made to count the numbers from one to ten, in a loud tone of voice, and slowly. The superintending officer, and not the surgeon, will be held responsible for the correctness of this measurement.

Whenever a difference of opinion arises at the head-quarters of any corps, depôt, or recruiting district, as to the chest measurement of a recruit, a special report is to be made to the Adjutant-General, for submission to His Royal Highness the General Commanding-in-Chief, as to the final disposal of the man.

Cape Mounted Riflemen.

(To be attested as Infantry.)

Height, 5 feet to 5 feet 3 inches. Age, from 16 to 18 years.

Boys not under 14, and lads not over 16 (except for the Royal Engineers, who are not to exceed 15), of good character, may be enlisted by special authority as heretofore, to be trained as trumpeters, &c., &c., in the proportion of 1 to every 100 rank and file borne on the establishment of a regiment or corps; but on attaining the age of 18, they are to be considered eligible for the ranks.

Soldiers enlisted for unlimited service, and who have obtained, or may hereafter obtain, their discharge free or by purchase, may be re-enlisted for that arm of the service from which they were discharged up to the age of 38 for the Cavalry, Artillery, and Engineers, and up to 36 for the Infantry, provided they are in all respects eligible under the Recruiting Regulations.

Soldiers who have been, or may hereafter be, discharged after the completion of their first term of limited service, and who wish to re-enter the army, are not to be enlisted as ordinary recruits, but should be re-engaged for that branch of the army in which they had previously served, under the provisions of the Mutiny Act, and on making a declaration in the form given in the schedule annexed to that Act, and also on production of their discharge proving them to be eligible for re-engagement under the regulations annexed to the Royal Warrant of the 30th October, 1861.

Distribution of the Levy Money at Home and Abroad.

Bounty.

		£	s.	d.
To the Cavalry, Artillery, and Infantry Recruit.	On joining his corps, and being finally approved by his Commanding Officer, in cash, without deduction	1	0	0
To the Royal Engineer Recruit.	Ditto ditto ditto ..	2	0	0
	Boys and lads enlisted by special authority, to be trained as Musicians, Trumpeters, Buglers, or Drummers, are not entitled to bounty.			
	A complete Kit of necessaries to each man and boy.			
To the Superintending Officer.	On final approval by the Inspecting Field Officer, to cover the expense of postage, stationery, &c. ..	0	5	0
	For attesting	0	1	0
	Surgical examination	0	4	0
	The Fee to Private Medical Practitioners to be paid in conformity with the directions of the War Office Circular, No. 1173, dated 5th January, 1853.			
To the Party, including Bringer.	On final approval by the Inspecting Field Officer, including 3*s.* 6*d.* to be paid to the bringer	0	5	0
	On the recruit leaving the district, including 4*s.* to be paid to the bringer	0	10	0
	For conducting the recruit to his corps	0	1	0

Soldiers enlisted for limited service, who, while serving, renew their engagement for a further term; or who having been, or may hereafter be discharged, after the completion of their first period of limited service, re-engage to serve for a further term, in accordance with the provisions of the Mutiny Act, and the regulations and restrictions annexed to the Royal Warrant, dated 30th October, 1861, will be entitled to bounty and a free kit (or an allowance in lieu thereof), but no rewards will be granted in such cases, nor for boys or lads enlisted by special authority, to be trained as trumpeters, buglers, drummers, or musicians.

The Recruiting Regulations and bounty for the West India Regiments, Gold Coast Artillery Corps, Royal Malta Fencible Artillery, St. Helena Regiment, Cape Mounted Riflemen, and Ceylon Rifle Regiment, to continue the same as at present.

Medical. Circular Memorandum.

Army Medical Department, 18th January, 1862.

The Director-General requests that every case of syphilitic or venereal ulcer may be fully detailed in the Medical Case Book of the hospital in which the soldier is located.

Memorandum relative to the Transfer of Meteorological Instruments.

Army Medical Department, 20th January, 1862.

The Secretary of State for War having decided that for the future meteorological observations shall be taken by the officers of the Medical Department, instead of the Royal Engineers, instructions have been issued for the transfer on the 31st of March, of the instruments at to the Senior Medical Officer.

The Commanding Royal Engineer has been requested to give the necessary directions for the setting up of the instruments at the places where the observations are to be in future taken; and the Senior Medical Officer will be good enough to confer with him as to the most eligible place for the purpose.

The Senior Medical Officer will make arrangements to have the observations taken with great care, and always at the time laid down in the instructions; for upon the accuracy and punctuality with which they are taken their value depends. He will ascertain that the person who is entrusted with the duty fully understands how to read the different instruments correctly, and he will frequently verify the readings himself. When for any reason, the person by whom the observations are usually taken is absent, the Senior Medical Officer will satisfy himself that the person to whom the duty is deputed is fully competent to perform it.

Should at any time the observations not have been taken at the appointed hours, the return must be left blank, and no attempt is on any account to be made to fill up the blank by inserting an average, or any such means.

Forms are now being printed, and will be forwarded as soon as they are ready. The "sums" and "means" of all the columns are to be entered in the Return, and to the "means" the several corrections for index error, capillarity, and temperature are to be applied.

The observations are to be transmitted monthly to the Director-General of the Army Medical Department.

The Senior Medical Officer will report the receipt of the instruments from officers of the Royal Engineers, and the arrangements he has made for having the observations regularly taken.

J. B. Gibson, Director General.

The Medical Officer in charge of Stations
where Meteorological Instruments are in Possession.

Forms
General No.
1552.

Circular No. 737.

War Office, 30th January, 1862.

Sir,—I am directed by Secretary Sir G. C. Lewis to state that the Returns upon the War Office Forms, as originally numbered, 196, 197, and 198, containing the nominal roll and other particulars relative to whole regiments, service, and depôt companies respectively, may be discontinued. The information contained in the Forms 196 B, 197 B, and 198 B, will continue to be furnished to Medical Officers in charge of regiments and depôts as directed in Circular 605, dated 7th July, 1860; but hereafter the strength, according to the ages and services of the men, will be stated as on the 1st of January, instead of the 31st of March in each year. In future prints of these Forms, they will be numbered 196, 197, and 198, the letter B being omitted.

Edward Lugard.

Sanitary.

Circular.

Army Medical Department, 13th March, 1862.

Sir,—I have the honour to request, with reference to your future periodical inspection of the hospitals under your superintendence, that you will be pleased to state in your inspection report whether all the cases for which extras were ordered during the period have been inserted and detailed in the medical case book; and you will be good enough to transmit with the report a nominal return of all cases which have not been so entered, specifying the dates of the several admissions to, and discharges of the men from hospital.

I have, &c.,
J. B. Gibson, Director-General.

The Principal Medical Officer, &c.

Medical.

Circular Memorandum.

Army Medical Department, 7th April, 1862.

The number of Assistant-Surgeons who have undergone the necessary examination and been reported fit for promotion being sufficient, not only to fill the average vacancies in the ranks of Surgeons for a considerable period in time of peace, but also to meet any augmentation that the demands of war may require, and the object of the examination being to ascertain "that previous to promotion the Assistant-Surgeons have kept pace with the progress of medical science," so many only will in future be examined annually as will maintain the present number on the "passed" list.

Those Assistant-Surgeons, however, who entered the service in 1854, and who have not passed, will send in on the 31st of March of each year a notification that they are prepared for the examination whenever they may be called upon to undergo it.

J. B. Gibson, Director-General.

E. H.

Circular Memorandum.

(Addressed to the Army at Home and Abroad.)

Horse Guards, S.W., 7th April, 1862.

Army Hospital Corps.
1—(1862).

Gen. No. 197.

With reference to the War Office Circular, No. 714, dated 28th September, 1861, the General Commanding-in-Chief has to notify, that the regimental hospital establishments, fixed at page 2 of the Report of the Committee on the Army Hospital Corps, which accompanied the above circular, are *not* to be borne as supernumeraries, but are to form part of the establishment of the several corps.

His Royal Highness has approved of the men employed on hospital duty being exempted from musketry and gunnery instruction, and all duties but those of the hospital.

By Command,
James Yorke Scarlett, Adjutant-General.

Circular No. 752.

9961
188

Home and Foreign.

Victoria R.

Whereas it has been found expedient to revise the regulations under which field allowance is granted to officers of the general, garrison, and departmental staff, and to regimental officers of Our army: it is Our will and pleasure that, instead of the provisions contained in pages from 81 to 87 of Our Royal Warrant of the 1st July, 1848, which are hereby cancelled, those contained in this Our Royal Warrant, to be administered and interpreted by Our Secretary of State for War, shall, from the date hereof, be adopted.

1. Field allowances are intended to provide officers with the means of defraying the expenses to which they may be subject by being placed under canvas, or in taking or preparing for the field. These allowances are classed under two heads, ordinary and extraordinary, at the several rates set forth in the schedules hereunto annexed, marked A and B respectively, and shall be

granted with the strictest reference to the nature of the service, or to the preparation for it, which the emergency may require.

2. Ordinary field allowances are applicable to the encampment under canvas of troops in the United Kingdom, or in the colonies.

3. Extraordinary field allowances are sanctioned in cases when and whereever troops are engaged in military operations in the field in time of war, disturbance, or insurrection, whether actual or apprehended.

4. When either of these allowances is granted to troops serving out of the United Kingdom, the officer making the grant shall immediately report the same to the Secretary of State for War, stating his reasons for making the grant.

5. None but officers actually present and serving with, or in immediate connection with the troops, and not being in occupation of public quarters, nor in receipt of lodging money, shall be deemed entitled to receive field allowance; and heads of departments, commanding and other officers, certifying the returns of persons so entitled, will be held strictly responsible for their accuracy.

6. Issues of field allowances shall be made in manner following, viz.:

Ordinary (which is to be given only when specially authorized) by daily issue in arrear, commencing from the date of the encampment of the troops.

Extraordinary, for three months in advance, commencing from the date of the order to take the field. In cases, however, where military operations are likely to be of longer duration and of more serious extent, a double issue of the extraordinary allowance, amounting to six months in the whole, may be sanctioned by the General Officer on a foreign station, who will immediately report the same to the Secretary of State for War; or if the troops proceed from the United Kingdom, the previous authority of the Secretary of State for such double issue must be obtained. But if the service for which the three or six months' advance has been made shall extend beyond these periods respectively, the allowance for any further period shall be made according to the number of days, monthly in arrear.

7. An officer, on joining the force, who has not previously received field allowance, shall be entitled, when the ordinary rate is being issued, to receive it from the date of his joining, and when the extraordinary rate is being issued, to receive it in advance for three or six months from the date of the order for him to take the field.

The subsequent allowance being made by daily issue, as provided in the preceding article.

8. An officer serving with any field force who has received an advance of field allowance, and who shall succeed to a higher appointment, or obtain promotion, or a staff appointment, shall, if he continue to serve with the same force, be entitled to receive the difference between his old and new rates of allowance as a daily issue from the date of the general order notifying such appointment or promotion.

9. If an officer, who has received an advance of field allowance, shall quit the force with which he is serving in consequence of ill health or wounds, or on account of being ordered elsewhere, he shall not be liable to refund any portion of it to the public.

Should he, however, leave the force for his own convenience, he shall retain only that portion to which he would have been entitled up to the date of his departure, if it had been issued daily, and he shall refund the remainder.

10. A captain having brevet rank shall not receive field allowance according to that rank, unless he be directed by General Orders to perform field officer's duties.

11. A captain succeeding to the command of a regiment, or directed by General Orders to perform field officer's duties therewith, shall be entitled to receive a field officer's allowance.

12. An officer commanding a company shall be entitled to the allowance of a captain.

13. No officer shall, under any circumstances whatsoever, be authorized or permitted to receive or enjoy more than one rate of field allowance.

14. When bât horses or mules are required for regimental purposes, they will be provided under the orders of the General or other officer commanding

the force, and he will be guided by such instructions as may from time to time be issued by the Secretary of State for War.

The issue of tents and camp equipment will be regulated in like manner.

15. In any case, arising out of the United Kingdom, where a new appointment connected with the service, and not provided for by these regulations, shall appear to be absolutely necessary, the officer in command shall forthwith report and explain such necessity to the Secretary of State for War, awaiting the decision that may be given thereon; but if the case be one of emergency, he may, if he see fit, nominate to such appointment, assigning to the person selected such temporary rank as may be proper, and causing the same to be notified in General Orders; and such person shall be entitled to receive a corresponding rate of field allowance, if his employment bring him within the strict meaning of these regulations.

Given at Our Court at St. James's, this twenty-sixth day of April, 1862, in the twenty-fifth year of Our reign.

By Her Majesty's Command. G. C. LEWIS.

SCHEDULE of Field Allowances per Diem, applicable to Colonial or Foreign Service, as explained respectively in the foregoing Royal Warrant.

Class.	Rank.		Ordinary. A.			Extraordinary. B.		
	General, Garrison, and Departmental Staff.		£	*s.*	*d.*	£	*s.*	*d.*
1	General Officer, if commissioned as Commander of the Forces, or if in chief command of an Army		1	10	0	2	10	0
	General (or General Officer commanding a distinct corps of the Army)		1	4	0	2	0	0
2	Lieutenant-General (or General Officer commanding a division) and Officers ranking as such		0	18	0	1	10	0
3	Major-General (or other Officer commanding a brigade) and Officers ranking as such		0	12	0	1	0	0
4	Brigadier-General, and Officers ranking as such ..		0	9	0	0	15	0
5	Colonel, and ditto		0	6	0	0	10	0
6	Lieutenant-Colonel, and ditto		0	4	6	0	7	6
7	Major, and ditto		0	3	0	0	5	0
8	Captain, and ditto		0	2	0	0	3	6
9	Lieutenant, and ditto		0	1	6	0	2	6
10	Ensign, and ditto		0	1	0	0	2	0
	Regimental Officers.							
	Field Officer	each	0	2	6	0	4	6
	Surgeon-Major							
	Surgeon							
	Paymaster, if ranking as Major							
	Captain	each	0	1	6	0	2	6
	Paymaster, if ranking as Captain							
	Assistant-Surgeon, after six years' service ..							
	Veterinary-Surgeon, if ranking as Captain..							
	Adjutant	each	0	1	0	0	2	0
	Riding-Master							
	Quartermaster							
	Assistant-Surgeon, under six years' service..							
	Veterinary Surgeon, if ranking as Subaltern							
	Subalterns		0	1	0	0	1	6

Medical. Circular.

Army Medical Department, April 30th, 1862.

As great inconvenience has resulted from the practice of cancelling appointments made in compliance with the previously expressed wish of Medical Officers, the Director-General feels it necessary to notify to officers who apply for appointments to particular regiments or to the staff, and who subsequently may wish to withdraw their application, that should they neglect to do so prior to their names being forwarded to the military authorities, he cannot hold out any hope that such appointments will be cancelled.

Circular No. 768. Home Stations.

$\frac{\text{Gen. No. 2}}{2595}$

War Office, June 24th, 1862.

Whenever it is proposed to construct buildings for the use of troops, or buildings upon land appropriated for their use, the Commanding Royal Engineer will suggest a site to the General Officer commanding at the Station, who will order a board to assemble and to report on the subject. The board will consist of the head of the Department, Officer Commanding a regiment, or other responsible Officer (who is to occupy the building when erected) the Principal Medical Officer, and the Commanding Royal Engineer, or other Engineer officer.

The General Officer commanding will then transmit the report of the board, with his own opinion and that of the Commanding Royal Engineer, to the Quartermaster-General, for submission to His Royal Highness tho General Commanding-in-Chief, who will forward it, with such remarks as he may consider desirable, for the decision of the Secretary of State for War. The General Officer Commanding will also cause a copy of the report to be supplied to the Commanding Royal Engineer, who will forward it with his opinion for the consideration of the Secretary of State for War.

EDWARD LUGARD.

Sanitary. Departmental Memorandum.

Army Medical Department, Whitehall Yard, 14th August, 1862.

The Circular of the 15th January, 1859, $\frac{14,174}{6}$ relative to the mode of performing Vaccination, is cancelled.

Medical Officers are, therefore, requested to revert to the former method.

Circular No. 777. Home Stations.

$\frac{14}{\text{General No.}}$
$\overline{352}$

War Office, August 20th, 1862.

Sir,—With reference to clause 5 of the Explanatory Directions with Circular No. 204, directing that the charge for an officer travelling by railway should be made at 2*d.* a mile, unless the ordinary rate for a first class passenger is less, I am directed by Secretary Sir G. C. Lewis to acquaint you that all commissioned officers of Her Majesty's Forces, Ordnance Corps, and Militia, proceeding on duty at the public expense, are by the provisions of 7 and 8 Vict., cap. 85, clause 12, to be conveyed by the railway companies at fares not exceeding that rate.

2. I am, therefore to request that you will instruct all such commissioned officers (including all officers of the Commissariat, Medical, Purveyors, Chaplains, or Military Store Department) to claim their conveyance at this rate whenever travelling on any duty at the public expense.

3. The officer should be prepared to produce, at the request of the company's agent, the route or letter of service under which he is proceeding on duty at the public expense.

4. The same Act obliges the railway companies to convey 100lbs. of personal luggage without extra charge, and all excess at a rate not exceding ½*d.* a lb. All baggage, stores, arms, ammunition, and other necessaries, conveyed with troops at the public cost, should, as the Secretary of State is advised by the Law Officers of the Crown, be charged for by the railway companies at a rate not exceeding 2*d.* per ton per mile, the assistance of the military being given in loading and unloading if required by the Company.

I have, &c.

EDWARD LUGARD.

To General and other Officers Commanding at Home.

Circular No. 778. Home and Foreign.

24
P.M.P.
1064

War Office, August 20th, 1862.

The Secretary of State for War has decided that medical aid to all branches of the military service shall in future be governed by the Army Medical Regulations, dated 7th October, 1859, and that Circular No. 70, dated 19th March, 1857, and all other previous regulations and orders on the subject shall be cancelled.

This decision is notified for the information of staff and regimental officers and the Departments of the Army; and in accordance therewith, from and after this date, all officers, as well as the members of the civil and military departments, will only be entitled to Medical aid at the public expense when there is a military surgeon at the Station, or a private medical practitioner in attendance at contract rates on troops, staff pensioners, or the permanent staff of Militia Regiments; and when their residences are situated within the radius of a mile from the principal Army Dispensary at the Station, or such other point as may from time to time be fixed. No separate medical claims will be allowed for any of the individuals above named.

EDWARD LUGARD.

E. H. Circular Memorandum.

(Addressed to the Army at Home and Abroad).

General No. 224. Horse Guards, S.W., 3rd October, 1863.

Army Hospital Corps.
2—(1862).

His Royal Highness the General Commanding-in-Chief desires that, when regiments are divided, and detachment hospitals necessarily opened, a due proportion of the permanent Hospital Staff be attached thereto, for ward duty, according to the strength of detachments, and probable average number of sick.

It is anticipated that the liberal permanent staff now allowed for hospital duty will be equal to all ordinary requirements; but there will be no objection to the issue of diets to special orderlies, in accordance with the War Office Circular No. 733, of the 1st January, 1862, when such are necessarily required at the regimental head-quarters, in addition to the number of permanent orderlies left there for duty, after providing for the wants of detachment hospitals.

By command,
JAMES YORKE SCARLETT, Adjutant-General.

Circular.

Army Medical Department, 5th November, 1862.

Sir,—I have the honour to request that whenever it may be found necessary for a Medical Officer to return to England on the recommendation of a Medical Board, you will be pleased to forward to this Department, along with the proceedings of the board, a detailed history of the case, together with the course and particulars of treatment up to the latest date.

I have, &c.
J. B. GIBSON, Director-General.

The Principal Medical Officer, &c.
(Abroad.)

CIRCULARS, GENERAL ORDERS, MEMORANDA, &c.,

HAVING REFERENCE TO THE OFFICERS OF THE ARMY MEDICAL DEPARTMENT, ISSUED DURING 1863.

6600
803.

Circular No. 816. (Rations.)

Victoria R.,

Whereas We have judged it expedient to revise that part of Our Royal Warrant of the 1st day of July, 1848, which prescribes the number of daily rations of provisions to be issued to the several ranks of staff and regimental officers of Our Army serving at Foreign Stations, Our will and pleasure is, that Clause 3 of the before-mentioned Warrant be cancelled and the following regulations be adopted.

1. No staff, departmental, nor regimental officer, of whatever rank, is to draw from the public stores more than one daily ration of provisions for himself, for which he will pay the regulated stoppage.

2. No officer is to draw rations for the personal civil servants for whom he receives a pecuniary allowance, nor for the soldier servants he may be allowed to keep.

3. Every mounted officer will, however, be permitted to draw one daily ration of provisions for each effective male civil servant he may actually keep as a groom, when not provided with soldier grooms, according to the following scale, paying the regulated stoppage for each such ration :—

1 Groom	for 1 or 2 horses.	Necessarily and actually kept for the performance of his public duties,
2 Grooms	„ 3 „ 4 „	
3 „	„ 5 „ 6 „	
4 „	„ 7 „ 8 „	

provided such grooms be not servants for whom a pecuniary allowance is granted, nor black servants for whom a separate regulation is in force.

Given at Our Court at St. James's this 30th day of March, 1863, in the twenty-sixth year of Our Reign.

By Her Majesty's Command,
G. C. LEWIS

E. H. General Order. No. 824.

Horse Guards, S.W., 4th April, 1863.

Invalids.
1—(1863).

The Royal Victoria Hospital at Netley having been now organized and established under the approval of Her Majesty, the following instructions are published for general information, by order of His Royal Highness the Field-Marshal Commanding-in-Chief.

The Invalid Depôt at Chatham, and the Convalescent Hospital at Great Yarmouth having been broken up, the Royal Victoria Hospital at Netley will, in future, be the general place of reception for invalids of all branches of the Service arriving from foreign Stations. That Hospital, with the General Hospital at Dublin, will respectively receive doubtful cases only occurring in districts at home.

The Lords Commissioners of the Admiralty have issued the necessary instructions to their agents at colonial Stations respecting the despatch of invalids for Spithead (Portsmouth), and the Secretary of State for India has given similar orders respecting embarkations from that country.

The Lords Commissioners of the Admiralty have also made arrangements for the transfer of invalids and insane men to Netley, from ships anchoring at Spithead.

The Major-General Commanding the South-Western District at Portsmouth will superintend the transfers of invalids, and will himself dispose, under orders from head-quarters and existing regulations, of all "time-expired men," convicts, or others not being invalids who may arrive at that port. Officers commanding on board ship will therefore give over the invalids and insane men under their charge, and the documents connected with them, to the Commandant at Netley, the other non-commissioned officers and men, &c., &c., to the Staff Officer at Portsmouth appointed by the Major-General Commanding to receive them; and all the documents connected with non-commissioned officers and men sent home from foreign Stations should be prepared and kept separately, with careful reference to these arrangements.

In order to secure regularity and to prevent delay in the adjustment of the accounts of parties of invalids and others arriving from foreign Stations, it is expedient that the Officer in command should be instructed to cause, when practicable, the Acquittance Roll to be signed by each man before any individual quits the ship at Portsmouth. The officer should, if possible, sell while on board, the kits of men who may have died on the passage. He should likewise receive from the Captain of the ship whatever amount of "temperance money" may be due to his men, and deliver the same to the Paymaster at Netley.

The system of sending soldiers, found unfit for service at home Stations, to an Invalid Depôt twice a-year, viz., after each half-yearly inspection, is to be discontinued; and, whenever a man is considered by his commanding officer and regimental Medical Officer to be unfit for the service, an application is to be made to the General Officer Commanding the district in which he may be serving, for his removal to the head-quarters thereof, to be disposed of, in ordinary cases, by the General Officer and Principal Medical Officer of such district, after having been kept under the observation of the latter for such time as may be necessary to enable him to form an opinion upon the case. He will subsequently be examined by a Medical Board for final decision, the president of the board, if possible, not being under the rank of a Deputy Inspector General of Hospitals.

In very doubtful cases General Officers should recommend, when submitting them to the Adjutant General—or, if in Ireland, to the Deputy Adjutant-General at Dublin—that the invalids concerned be removed to Netley or Kilmainham for further treatment.

Should the board, in ordinary cases, pronounce the men unfit for further service, the General Officer Commanding will then come to a decision, with the assistance of the Principal Medical Officer, and transmit to the Adjutant General—or, if in Ireland, to the Deputy Adjutant-General at Dublin—for the final approval of the Field-Marshal Commanding-in-Chief, a Return, in two parts (for which forms will be supplied by the War Office, on application), one, of those men proposed for discharge, the other, of those to be either returned to their respective corps as convalescent, or sent to Netley or Kilmainham for further treatment as doubtful cases.

General and other officers will bear in mind that the Royal Artillery and Royal Engineer branches of the Adjutant General's Department, are distinct from each other, and from that appertaining to the Cavalry and Infantry. The above Returns will be rendered, therefore, separately in each case. The General Return will be prepared in regimental order.

On receiving an authority for the disposal of these classes, respectively, the discharge documents of the first-named, for which an improved form is about to be issued, are to be duly completed and transmitted to the Adjutant-General, or to the Deputy Adjutant-General at Dublin, as the case may be, for confirmation, with a view to their being submitted to the Chelsea Board.

The Right Honourable the Secretary of State for War has assented to the recommendation of His Royal Highness, that when soldiers, borne on the strength of their corps as married men, are temporarily removed to the head-quarters of districts or to a general hospital, their wives and families, who will remain with their corps until their cases are decided upon, shall receive the same allowances as are usually granted to women and children whose husbands and fathers are separated from them on account of their being in camp.

Those invalids who, under the foregoing instructions, are sent to Netley or Kilmainham Hospitals, are to be reported upon in similar Returns, of unfit and convalescent, as those prescribed for district invalids, duly signed by the Governor and the Principal Medical Officer.

In order to carry out the foregoing instructions at Stations not in districts or divisions, the invalids at Maidstone will be disposed of by the Major-General and Principal Medical Officer at Chatham.

Those at Hounslow will be sent to Woolwich to be similarly treated.

The Household Cavalry will be inspected in London, and reported upon by the Inspector-General of Cavalry and a Deputy Inspector-General of Hospitals, from head-quarters.

The Household Infantry, or other Infantry in London, will be inspected by the Major-General Commanding the Foot Guards and a Deputy Inspector-General of Hospitals, from head-quarters, who will have full authority to visit the hospitals and inspect the invalids.

The invalids at the five Stations specified in the margin* will be inspected and disposed of by the Commandant and Principal Medical Officer at Colchester.

Those at Pembroke and at Bristol, by the General Officer and Medical authorities at Davenport.

As the orders now given dispense with the personal examination of invalids by the Secretary and Medical Officer of the Royal Hospital at Chelsea, it becomes more important than hitherto that the discharge documents should contain in them every information necessary for the guidance of the Commissioners in assigning pensions, either permanent, temporary, or conditional.

His Royal Highness the Field-Marshal Commanding-in-Chief will therefore hold Commanding Officers of regiments, and Medical Officers, responsible that no discharge documents are signed by them which do not give a full and perfect record of the soldier's service at home and abroad, his wounds, medals, and badges, at well as his general conduct and character, and besides the immediate cause of disability for further service, the effect which climate, wounds, or his own habits, have had on his constitution, should be distinctly stated.

The new forms of discharge must be accurately filled up, and it must be remembered by those who compose the "Boards," that any omission or negligence in stating the soldier's case may prove a serious detriment to him, on one hand, or an imposition on the public, on the other.

By Command,
JAMES YORKE SCARLETT, Adjutant-General.

Statistical. Circular.

Army Medical Department, 30th April, 1863.

Sir,—With reference to the Circular dated Horse Guards the 4th instant, I have the honour to call your attention to the following arrangements which this alteration in the mode of invaliding renders necessary.

You will be pleased to transmit weekly to this office a return on the enclosed form, including only the cases of such men as may be sent to the head quarters of the District to be disposed of as invalids, and you will give directions to the Medical Officers in whose hospitals these men may (for convenience) be treated, that such cases are not to be included in their Returns.

The Medical History Sheets of these men should be forwarded to you, and in the event of their non-arrival, you will call upon the Medical Officers to transmit them to you without delay. The sheets of such men as are finally discharged the service should accompany the Weekly Return in which their names appear as discharged, the requisite details as to the *date* and *cause* of discharge being inserted in them; those of men who are returned to their corps, should be transmitted to the surgeon in charge, while those of any men who may be sent to Netley or Kilmainham for further treatment, must be forwarded to the Principal Medical Officer of these hospitals.

The disposal of such men as may die, and of those who are discharged the service as invalids, must be notified by you to the surgeon of the corps or depôt to which the men belonged, by means of the medical certificate.

J. B. GIBSON, Director-General.

The Principal Medical Officer, District.

Circular No. 825.† (Relative Rank).

28971
19

Home and Foreign.

Victoria R.,

Whereas We have judged it expedient to cancel Our Royal Warrant of 28th March, 1861, which assigns the relative rank of Junior Major to certain staff and regimental surgeons of Our Army, and to revise those parts of the several other Royal Warrants now in force, prescribing the privileges attaching to relative rank of officers of the civil departments and non-combatant officers of the military departments of Our Army; Our will and pleasure is that such privileges shall, from the date of this Our Royal Warrant, be regulated as follows:—

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* Colchester, Norwich, Ipswich, Yarmouth, Harwich.

† This Warrant is to be substituted for that previously issued, dated 7th March, 1863, No. 808, which is hereby cancelled, and is to be returned to the War Office.

Relative rank shall carry with it all precedence and advantages attaching to the military rank with which it corresponds, and shall regulate the rates of lodging money, number of servants, rations of fuel and light, or allowances in their stead, except for officers and others to whom special rates have been assigned, detention and prize money, according to the regulations, and upon the conditions, in force from time to time; but such relative rank shall not entitle the holder to military command of any kind whatsoever nor to the Presidency of Courts-Martial, Courts of Inquiry, Committees, or Boards of Survey; but when the President of such Courts, Committees, or Boards shall be junior to the Officer of the Civil Department, then such Member of the Civil Department shall attend as a witness and not as a member.

Choice of quarters shall be regulated by relative rank according to date of Commission; except in the case of Commanding Officers' quarters, and in cases in which special quarters shall be permanently appropriated, with the approval of the Secretary of State for War.

Relative rank shall not entitle the holder to salutes from ships or fortresses, nor to the turning out of guards; but it shall entitle him, if commissioned, to salutes by sentries or by individual soldiers.

Honorary rank of Paymasters shall carry with it all the privileges and advantages attaching to relative rank of corresponding degree.

All Commissioned Officers serving with the troops, shall be entitled to funeral honours, according to their relative military rank.

Given at Our Court of St. James's, this 1st day of May, 1863, in the twenty-sixth year of Our reign.

By Her Majesty's Command,
DE GREY AND RIPON.

E. H. Circular Memorandum.

(Addressed to the Army at Home and Abroad.)

General No. 258. Horse Guards, S.W., 13th May, 1863.

Hospital Orderlies.
1—(1863).

His Royal Highness the Field-Marshal Commanding-in-Chief, in concurrence with the Secretary of State for War, is pleased to direct that hospital orderlies carrying bundles or parcels are not to leave the hospital without an authorized pass, which, in the absence of higher authority, is to be signed by the senior non-commissioned officer of the branch with which they are serving. Sentries will be instructed to stop all orderlies carrying bundles who are not furnished with passes as above ordered.

By Command,
JAMES YORKE SCARLETT, Adjutant-General.

Sanitary. Departmental Memorandum.

Army Medical Department, 14th May, 1863.

The Minister for War having sanctioned the substitution of 4 ozs. of oatmeal, with 8 ozs. of milk, for the 2 ozs. of arrowroot and 1 oz. of sugar, in the scale of "Spoon Diet," at the discretion of Medical Officers in charge of sick, the word "Oatmeal" is to be inserted in the diet-sheet of the patient whenever this article is so ordered.

To every Medical Officer in the Service.

Sanitary. Departmental Memorandum.

Army Medical Department, 9th June, 1863.

The War Office authorities having recently decided that the allowance of fuel to Surgeries shall, in future, be 180 lbs. per week from November to March inclusive, and 80 lbs. per week during the other months of the year, but that the light allowance shall continue to be governed by the schedule laid down for Surgeries on page 10 of War Office Circular 767, the arrangement is notified for the information of Medical Officers.

To Medical Officers at Home Stations.

Circular.

Sanitary. Army Medical Department, 24th June, 1863.

Sir,—Much inconvenience and extended correspondence in regard to defective sanitary arrangements, deficiencies of provisions, medical comforts, &c., for troops on board ships, having been occasioned by the Reports on these subjects by the Medical Officers in charge being made after the disembarkation of the troops, and at a time when the Commanding and other Officers on duty with the parties were dispersed,

I have the honour to request that you will be so good as to instruct every Medical Officer who may hereafter arrive at in charge of troops, that, should he have found it necessary to make any statement in the usual "Report of Sick," or other document, animadverting upon the sanitary arrangements or the supplies on board, it will be necessary for him to submit a duplicate of such Reports to the Officer Commanding, prior to sending the original to yourself for transmission to this Department.

Should his Report contain any subject requiring investigation, it must be immediately submitted by you to the General or Officer Commanding on the spot, who will then be enabled to make full inquiries into the circumstances complained of before the officers or troops leave the ship or port of disembarkation.

You will also instruct every Medical Officer embarking in charge of troops at to observe the same rule on reaching his destined port of disembarkation.

I have, &c.

J. B. Gibson, Director-General

The Principal Medical Officer
at Home Ports of Embarkation.

Sanitary. Circular.

Army Medical Department, 25th June, 1863.

Sir,—Much inconvenience and extended correspondence, in regard to defective sanitary arrangements, deficiencies of provisions, medical comforts, &c., for troops on board ships having been occasioned by the Reports on these subjects by the Medical Officers in charge being made after the disembarkation of the troops at home, and at a time when the Commanding and other officers on duty with the parties were dispersed.

I have the honour to request that you will be so good as to instruct every Medical Officer who may hereafter embark at in charge of troops, that should he find it necessary on arriving in England to make any statement in the usual "Report of Sick" or other document, animadverting upon the sanitary arrangements or the supplies on board, it will be necessary for him to submit a duplicate of such Report to the Officer Commanding prior to sending the original to the Principal Medical Officer at the port of disembarkation for transmission to this Department.

Should his Report contain any subject requiring investigation, it will be immediately submitted by the latter Officer to the General or Officer Commanding on the spot, who will then be enabled to make full enquiries into the circumstances complained of, before the officers or troops leave the ship or port of disembarkation.

I have, &c.

The Principal Medical Officer at
Foreign Ports.

J. B. Gibson, Director-General.

Sanitary. Departmental Circular (revised).

Army Medical Department, 25th June, 1862.

The Minister for War having been pleased, on the recommendation of the Director-General, to modify the restriction found necessary in regard to the use of calves' feet jelly, Medical Officers are authorized to order it in such cases as may appear to them to demand its administration. Histories of all such cases are to be submitted, on their termination, to the Director-General, in transcript from the Medical Case Book.

Circular No. 829. (Washing Sheets, &c., for Hospital Servants.)

Home and Foreign.

$\frac{7530}{192}$ War Office, 4th July, 1863.

A diversity of practice having been found to exist in regard to charging for clean sheets supplied to hospital servants, the Secretary of State for War desires that the regulations on this subject, applicable to soldiers occupying quarters in barracks, may be extended to the Army Hospital Corps, as well as to regimental hospital servants occupying beds in hospital buildings. Purveying Officers will therefore issue clean sheets to non-commissioned officers and privates accommodated with quarters or beds in buildings under their custody, and on the first day of each month will charge for the same at the rate of 2*d.* for each bed so provided.

The vouchers for the stoppages on this account are W.O. Form 1392 (Home), and 1470 (Abroad); and the amounts should be recovered from, or credited by, the Paymasters, as the case may be, in conformity to the practice existing with regard to hospital damages.

Charges for sheets improperly soiled should be assessed by Purveying Officers, as in the case of other hospital damages; and when towels are issued, a charge of 1*d.* per round towel should be recovered from the servants for whose use they are required.

EDWARD LUGARD.

To Commanding Officers, Purveying Officers, and Paymasters.

Medical.

Army Medical Department, 29th July, 1863.

Sir,—As regiments at home may be called upon from time to time to furnish volunteers for other corps, I have the honour to request you will exercise due care in the medical examination of such men—taking as your guide the instructions for the examination of recruits laid down in the Hospital Regulations, any deviation from which, without special authority, will render you responsible for the expense which may be incurred in the transfer of volunteers passed by you, should they be found unfit for service on joining their new corps on account of any disability specified in the above-named instructions.

I have, &c.

J. B. Gibson, Director-General.

To the Medical Officer, 2nd Battalion 1st Regiment.

(A similar letter was addressed to each Medical Officer at home.)

Circular No. 834.—Civil Surgeons.

$\frac{592}{183}$ War Office, 25th August, 1863.

The Secretary of State for War hereby cancels Circular No. 428, of the 24th May, 1859, and all other regulations at present in force respecting the rates of payment to be made by the War Office to civil surgeons, who at foreign stations are specially placed in medical charge of troops or military invalids, embarked in vessels, other than contract mail packets, or vessels required, either by Act of Parliament, or under the terms of the agreement with the Admiralty, to carry qualified surgeons.

The rates to be allowed for the future in such cases will be those laid down in the annexed scale, and the Secretary of State desires that it may be undertood that a civil surgeon thus employed will have no claim to be provided with a passage back to the station at which he took over the medical charge of the troops, nor to any sum beyond the prescribed scale of remuneration.

The claims should invariably be made out and certified upon a form similar to that attached to the scale.

EDWARD LUGARD.

SCALE of Remuneration to Civil Surgeons attending upon Troops on passage on board either Transports or Troop Ships.

Invalids.	s.	d.	
Any number* less than 5 Officers, Men, Women, or Children	5	0	Daily.
5 and under 10 „ „	7	6	„
10 „ 20 „ „	10	0	„
20 „ 30 „ „	13	0	„

With 4*s.* per day additional for each further number of 10 invalids; but in no case to exceed 50*s.* a-day.

Other Troops.	s.	d.	
Under 20 Persons, Officers, Men, Women, and Children ...	5	0	Daily.
20 and under 50 „ „	7	6	„
50 „ 100 „ „	12	0	„
100 „ 200 „ „	15	0	„
200 „ 300 „ „	18	0	„
300 „ 400 „ „	22	0	„

With 3*s.* per day additional for each further number of 100 persons; but in no case to exceed 50*s.* a-day.

CERTIFICATE of the Number of Troops, or other Persons, in Medical Charge of Mr. Surgeon on board the during the month of 18

186	Numbers attended on each day.			Rate of Remuneration to which the Civil Surgeon is entitled for each Day according to the Scale laid down in W. O. Circular.	Daily Amount of Remuneration.			186	Numbers at tended on each day.			Rate of Remuneration to which the Civil Surgeon is entitled for each Day according to the Scale laid down in W. O. Circular.	Daily Amount of Remuneration.		
Month	Troops.	Others.	Total.		£	s.	d.	Month.	Troops.	Others.	Total.		£	s.	d.
Days.								Brought over.							
1								Days.							
2								17							
3								18							
4								19							
5								20							
6								21							
7								22							
8								23							
9								24							
10								25							
11								26							
12								27							
13								28							
14								29							
15								30							
16								31							
				Total ..	..	..	..					Total ..	..	..	..

We certify that the above men were embarked in a† ____________ state, and without a Government Medical Officer.

Signatures of
Transport Officer on board ____________
Military or other Commanding Officer ____________
Civil Surgeon in Charge ____________
Master of the Transport‡ or Troop Ship ____________

N.B.—This List is intended to contain the daily particulars for each month, and must be filled up accordingly before transmission to the War Office.

* The women and children embarked with invalid troops are not to be reckoned in the numbers to be paid for unless actually requiring medical attendance.

† To be filled up with the word "Healthy" or "Sick."

‡ The Master is to sign only in cases in which there is no transport officer on board.

Sanitary.

Circular.

Army Medical Department, 5th October, 1863.

Sir,—Great inconvenience and expense have arisen in certain recent instances by the necessary detention of ships, in consequence of the occurrence of cases of small pox and other contagious diseases among the women and children embarked with the troops.

I have, therefore, to request that, when your own corps is about to embark, or whenever drafts are ordered to proceed from the depôt battalion or regiment under your medical charge, you will make a careful inspection of every soldier, woman, and child on the day of their departure, or, if the military arrangements will not admit of this, on the day previous, with a view to prevent any person, who may show symptoms of contagious disease, proceeding with the regiment or the drafts.

You will forward to this Department a certificate that you have performed the above duty.

I have, &c.
J. B. Gibson, Director-General.

The Medical Officer in charge of Depôt Battalion
or Regiment (Home and Foreign).

Sanitary.

Circular.

Army Medical Department, 5th October, 1863.

Sir,—Great inconvenience and expense have arisen in certain instances from the necessary detention of ships, in consequence of the occurrence of small pox and other contagious diseases among the women and children embarked wit the troops.

I have the honour, therefore, to request that, whenever a corps or drafts from any of the depôt battalions or regiments under your professional superintendence are ordered to proceed for embarkation, you will be so good as to take the necessary measures to secure a most careful medical inspection of every soldier, woman, and child on the day of their departure, or, if the military arrangements will not admit of this, on the day previous, with a view to prevent any person, who may show symptoms of contagious disease, proceeding with the regiment or the drafts.

You will be pleased to require every Medical Officer who shall make such inspection to forward a certificate to this Department of his having performed the duty.

I have, &c.
J. B. Gibson, Director-General.

The Principal Medical Officer, &c., &c.,
(At Home and Abroad).

Meteorological.

Circular Memorandum.

Army Medical Department, 20th November, 1862.

With a view to render the meteorological returns more accurate in their details, the following points must be attended to in recording the observations:—

1st. The readings of the self-registering maximum thermometers at 9 a.m. (columns 19 and 23) must be entered in the return as the temperature of the previous day; for instance, the readings of the self-registering maximum thermometers at 9 a m. on the first of the month, must be registered as the temperature of the last day of the proceeding month; the readings on the morning of the 2nd as that of the 1st, and so on. This rule is *not* applicable to any of the other thermometers.

2nd. With the exception of the "Attached Thermometer," which may be read to degrees only, all the thermometers must be read to the tenths of a degree.

3rd. The force of the wind is to be estimated in whole numbers, from 0 (a calm) to 12 (a hurricane) as directed in page 31 of the Appendix to Sir H. James' Book of Instructions.

4th. The amount of cloud is to be estimated in whole numbers, from 0 (a perfectly clear sky) to 10 (the sky completely covered).

5th. It is necessary to ascertain that there is no leakage from the rain guages, and that neither is so situated with regard to buildings or trees, as to affect in any way the quantity of rain collected.

6th. The column of remarks should contain any observations as to storms, wind, rain, clouds, &c., that may tend to elucidate the details of the return.

7th. On dividing the "sums" of the readings to obtain the "means," when the remainder exceeds the half of the divisor, the next highest number should be taken as the "quotient;" for instance, if the "sum" of the readings of the barometer at 9 a.m. for a month of thirty days amounts to 893,932, this divided by the number of observations, 30, gives the "mean" as 29·797, with a remainder of 22; in such a case the observation should be recorded as 29·798, because it involves the smallest difference from the exact number.

J. B. Gibson, Director-General.

The Senior Medical Officer, &c., &c.

Sanitary.

Circular.

Army Medical Department. 28th November, 1863.

Adverting to article 242 of the Purveyor's Regulations, which sanctions the issue of fuel to hospital wards, irrespective of any scale of allowances for rooms or fire-places, Earl de Grey and Ripon directs that Medical Officers in charge of Hospitals will in future obtain the approval of the Principal Medical Officer of the District to all issues which they may consider necessary beyond the quantities prescribed by Circular 767, and thereafter transmit such authority to the Purveyor as a voucher to the charge in the weekly Fuel Return rendered by him to the War Office.

J. B. Gibson, Director-General

To all Medical Officers at Home Stations.

Medical.

Army Medical Department, November 1863.

Sir,—His Royal Highness the Field-Marshal Commanding-in-Chief having been pleased to notify "That men should not be received into the service who do not see well, to 600 yards at least, a black centre 3 feet in diameter, on a white ground," I have the honour to request you will have the goodness to pay strict attention to this command in the examination of recruits.

I have, &c.

J. B. Gibson, Director-General.

Addressed to all Medical Officers at Home.

NOMINAL ROLL OF MEDICAL OFFICERS SERVING ON FULL PAY.*

DIRECTOR-GENERAL.

James Brown Gibson, M.D., C.B., Honorary Physician to the Queen (7th March, 1860).

INSPECTORS-GENERAL OF HOSPITALS.

Name.	Date of Commission.	Date of Entry into the Service.	Station.
Thomas Galbraith Logan, M.D., Honorary Physician to the Queen.	8 April 1859	8 May 1828	London.
Wm. Mure Muir, M.D., C.B.	15 Feb. 1861	22 Nov. 1842	Canada.
Thomas David Hume, M.D.	31 Dec. ,,	26 Oct. 1826	Malta.
Arthur Anderson, M.D. ..	28 Jan. 1862	16 ,, 1835	Netley.
Geo. Stewart Beatson, M.D.	1 May 1863	13 July 1838	Bengal.
Samuel M. Hadaway ..	11 Aug. ,,	22 Nov. 1827	Dublin.
Thos. Ross Jameson, M.D.	17 Nov. ,,	10 Jan. 1834	Portsmouth.

DEPUTY INSPECTORS-GENERAL OF HOSPITALS.

Name.	Date of Commission.	Date of Entry into the Service.	Station.
Robert Lawson	8 Dec. 1854	15 May 1835	Cape of Good Hope
Arch. Gordon, M.D., C.B...	25 Jan. 1856	27 June 1836	Mauritius.
V.C. James Mouat, C.B...	1 Oct. 1858	14 Dec. 1838	New Zealand.
John Drope McIllrec ..	31 Dec. ,,	20 Feb. 1835	Nova Scotia.
George Taylor, M.D... ..	,, ,,	16 May 1834	Shorncliffe.
Joshua Paynter	,, ,,	11 Jan. 1839	Gibraltar.
Patrick Gammie..	,, ,,	17 June 1836	Bombay.
Richard Dane, M.D... ..	,, ,,	17 July 1835	
Fras. Wm. Innes, M.D., C.B.	,, ,,	10 Feb. 1837	Corfu.
John Fraser, M.D., C.B. ..	,, ,,	20 Aug. 1841	Ceylon.
John Harry Ker Innes, C.B.	,, ,,	8 April 1842	Bengal.
Thomas Longmore, Prof. of Clin. and Mil. Surgery	,, ,,	3 Feb. 1843	Army Medical School, Netley.
Samuel Currie, M.D., C.B.	18 Jan. 1859	14 Oct. 1836	Edinburgh.
Richard James O'Flaherty	19 July ,,	9 Jan. 1835	Dublin.
Thos. Graham Balfour, M.D.	22 ,, ,,	29 April 1836	London.
Henry Mapleton, M.D. ..	26 Aug. ,,	12 July 1839	
Chas. A. Gordon, M.D., C.B.	11 May 1860	8 June 1841	Bengal.
William Rutherford, M.D.	15 Feb. 1861	2 July ,,	London.
William Home, M.D. ..	28 Jan. 1862	12 Jan. 1838	
James McGregor	,, ,,	24 July 1834	West Indies.
John Bent	,, ,,	25 April 1838	Jamaica.
William Dick, M.D.	17 Mar. 1863	13 May 1836	Hong Kong.
Robt. K. Prendergast ..	24 ,, ,,	7 Oct. ,,	Curragh.
Jas. G. Inglis, M.D., C.B...	1 May ,,	29 Mar. 1839	Madras.
J. W. Chambers, M.D. ..	,, ,,	4 Oct. ,,	Woolwich.
F. C. Annesley	11 Aug. ,,	17 Sept. ,,	Devonport.
Jas. Alex. Fraser, M.D. ..	17 Nov. ,,	20 Dec. ,,	
Local Rank.			
William C. Maclean, M.D., Prof. Clin. and Mil. Med.	9 April 1861	..	Army Medical School, Netley.

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* Corrected to 31st of March, 1864.

SURGEONS-MAJOR.

NAME.	Date of Commission.	Date of Entry into the Service.	Service.
James Guy Piers Moore ..	8 Dec. 1854	3 Mar. 1837	Staff.
John Gillespie Wood, M.D.	9 Feb. 1855	11 Jan. 1839	Staff.
Wm. Leslie Langley, M.D.	16 ,, ,,	,, ,,	Staff.
Edward John Burton, M.D.	,, ,,	11 May 1838	Staff.
Henry Cooper Reade ..	1 May ,,	31 ,, 1839	Staff.
Richard Coffin Elliot, C.B.	21 ,, ,,	7 June ,,	Staff.
John Mure, M.D. ..	6 July ,,	4 Oct. ,,	Staff.
William Sall, M.D. ..	20 ,, ,,	10 May ,,	Staff.
Henry Downes, M.D. ..	7 Sept. ,,	1 Nov. ,,	Staff.
John Ashton Bostock, M.D., Hon. Surg. to the Queen	20 Mar. 1857	8 Feb. 1842	Scots Fusilier Guards.
George Eleazer Blenkins ..	24 Jan. 1858	13 April 1838	Grenadier Guards.
Thomas Patrick Matthew..	31 Aug. ,,	12 Dec. 1843	Staff.
A. Maclean..	1 Oct. ,,	4 Oct. 1833	1st Depôt Battalion
John Grant..	,, ,,	9 June 1837	Staff.
Alex. Douglas Taylor, M.D.	,, ,,	15 Sept. ,,	Staff.
James Somerville Litle ..	,, ,,	2 Nov. 1836	Royal Artillery.
George Thomas Ferris ..	,, ,,	26 Sept. 1837	Royal Artillery.
Melborne Broke Gallwey ..	,, ,,	24 April 1838	Staff.
Henry Franklin	,, ,,	29 Dec. 1837	Staff.
Wm. Ord Mackenzie, M.D.	4 Jan. 1859	4 Jan. 1839	3rd Hussars.
James Jopp, M.D... ..	22 Feb. ,,	22 Feb. ,,	76th Foot.
Thomas Rose Dyce ..	7 June ,,	7 June ,,	1st Bat., 15th Foot.
Henry Jas. Schooles, M.D.	22 July ,,	28 ,, ,,	Staff.
John Donald	23 Aug. ,,	23 Aug. ,,	Staff.
Duncan Donald McCay McDonald	4 Oct. ,,	4 Oct. ,,	Staff.
Geo. Murray Webster, M.D.	6 Dec. ,,	6 Dec. ,,	Staff.
Joseph Burke	10 Jan. 1860	10 Jan. 1840	1st Bat., 3rd Foot
A. Gibb, M.D.	,, ,,	,, ,,	Staff.
Robt. Carew Anderson,M.D.	22 May ,,	22 May ,,	Staff.
Wm. Hen.Mackintosh,M.D.	,, ,,	,, ,,	2nd Bat., 21st Foot.
John Summers, M.D. ..	29 ,, ,,	29 ,, ,,	Staff.
Charles R. Nicoll	26 June ,,	26 June ,,	1st Bat., Gren. Gds.
John Burton St.Croix Crosse	9 Oct. ,,	9 Oct. ,,	11th Hussars.
Richard Geo. Davys Banon	30 ,, ,,	30 ,, ,,	Staff.
Jas. McGrigor Grant, M.D.	6 Nov. ,,	6 Nov. ,,	84th Foot.
Jas. Carroll Dempster, M.D.	29 Dec. ,,	29 Dec. ,,	
Edward Scott Docker ..	,, ,,	,, ,,	35th Foot.
William Campbell Seaman, M.D.	16 Feb. 1861	16 Feb. 1841	Staff. 72nd Foot.
Henry Clinton Foss	26 ,, ,,	26 Feb. ,,	1st Bat., 2nd Foot
George Williamson, M.D...	26 Mar. ,,	26 Mar. ,,	64th Foot.
William Kilner Swettenham, M.D.	9 April ,,	9 April ,,	1st Bat., 5th Foot.
William Arden	,, ,,	,, ,,	14th Hussars.
Robert Bowen	18 May ,,	18 May ,,	1stBat., Rifle Brigade.
Jas. John Marjoribanks Wardrop..	21 ,, ,,	21 ,, ,,	2nd Bat., Gren. Gds.
John Ewing	,, ,,	,, ,,	62nd Foot.
Thomas Waller Barrow ..	8 June ,,	8 June ,,	Staff.
Ludovic Charles Stewart ..	,, ,,	,, ,,	Staff.
Richard Gamble, M.D. ..	,, ,,	,, ,,	1st Bat., 24th Foot.
Nesbitt Heffernan, M.B. ..	11 June ,,	11 ,, ,,	1st Bat., 11th Foot.
Thomas Joliffe Tufnell ..	,, ,,	,, ,,	Staff.
Henry Briscoe M.D. ..	27 Aug. ,,	27 Aug. ,,	Royal Artillery.
Augustus Purefoy Lockwood	17 Sept. ,,	17 Sept. ,,	2nd Dragoons
Geo. Thos. Galbraith, M.D.	,, ,,	,, ,,	Staff.
Cosmo Gordon Logie, M.D.	5 Oct. ,,	5 Oct. ,,	Royal Horse Guards.
Orlando Sawle Donnall ..	19 ,, ,,	19 ,, ,,	Staff.

SURGEONS-MAJOR—*continued.*

NAME.	Date of Commission.	Date of Entry into the Service.	Service.
Edward Menzies	29 Oct. 1861	29 Oct. 1841	Staff.
Ethelbert Hen. Blake, M.D.	16 Nov. ,,	16 Nov. ,,	Royal Artillery.
James Richard Ffennell ..	20 ,, ,,	20 ,, ,,	2nd Bat., 16th Foot.
James Macbeth, M.D. ..	3 Dec. ,,	3 Dec. ,,	74th Foot.
Richd. Fras. Valpy De Lisle	10 ,, ,,	27 Aug. ,,	Royal Artillery.
Thos. Goldie Scott, M.D...	14 ,, ,,	14 Dec. ,,	79th Foot.
John Elliot Carte, M.B. ..	31 ,, ,,	31 ,, ,,	2nd Bat., 14th Foot.
Huntley Geo. Gordon, M.D.	,, ,,	,, ,,	69th Foot.
Thomas Guy, M.D. ..	28 Jan. 1862	28 Jan. 1842	Royal Artillery.
Robert M'Wharrie, M.D...	11 Mar. ,,	11 Mar. ,,	59th Foot.
Sandford McVittie Lloyd, M.D.	2 April ,,	5 ,, 1841	Staff.
Wm. Green Trousdell, M.D.	8 ,, ,,	8 April 1842	Staff.
Patrick Sinclair Laing ..	,, ,,	,, ,,	2nd Bat., 23rd Foot.
Benjamin Swift, M.D. ..	,, ,,	,, ,,	96th Foot.
Charles Bush Hearn ..	15 ,, ,,	15 ,, ,,	1st Bat., 1st Foot.
V.C. Joseph Jee, C.B. ..	,, ,,	,, ,,	78th Foot.
Thomas Best	22 ,, ,,	22 ,, ,,	68th Foot.
Edward Howard	29 ,, ,,	29 ,, ,,	1st Bat., 20th Foot.
Henry Lionel Cowen ..	17 June ,,	17 June ,,	Ceylon Rifles.
Miah W. Murphy	22 July ,,	22 July ,,	91st Foot.
Edward Moorhead, M.D...	2 Aug. ,,	2 Aug. ,,	29th Foot.
Francis Reid, M.D. ..	,, ,,	,, ,,	Staff.
Hugh Crawford Walshe, M.D.	3 Sept. ,,	3 Sept. ,,	Royal Artillery.
Benj. Wm. Marlow, M.D...	25 Oct. ,,	25 Oct. ,,	28th Foot.
John Wyatt	9 Jan. 1863	20 May 1851	Coldstream Guards.
Alexander Forteath, M.D.	10 Feb. ,,	10 Feb. 1843	1st Dragoons.
Luke Barron, M.D. ..	7 May ,,	10 July 1840	Staff.
George C. Meikleham, M.D.	16 June ,,	16 June 1843	70th Foot.
Robert Marshall Allen ..	30 ,, ,,	30 ,, ,,	3rd Dragoon Guards.
Eneas Mackintosh Macpherson	6 Sept. ,,	21 Aug. 1840	Staff.
Vere Webb..	13 Oct. ,,	13 Oct. 1843	Staff.
John Mullins	,, ,,	,, ,,	Staff.
David Reid Mackinnon ..	12 Dec. ,,	12 Dec. ,,	Staff.
Alexander Barclay, M.D. ..	22 ,, ,,	22 ,, ,,	Staff.
Alfred Crocker	26 Jan. 1864	26 Jan. 1844	2nd Bat., 3rd Foot.
William Godfrey Watt ..	1 March ,,	1 Mar. ,,	15th Hussars.
Robert Browne	,, ,,	,, ,,	2nd Bat., 25th Foot.
Jas. M. Scott Fogo ..	5 ,, ,,	5 ,, ,,	Royal Artillery.
John Wm. Mostyn, M.D...	8 ,, ,,	8 ,, ,,	Staff.

SURGEONS.

NAME.	Date of Commission.	Date of Entry into the Service.	Service.
John Thomas Watson Bacot	3 Dec. 1852	10 May 1844	89th Foot.
Wm. Freeman Daniell, M.D.	11 Mar. 1853	26 Nov. 1847	Staff.
George Fredk. Bone, M.D. ..	21 Oct. ,,	9 Dec. 1845	Royal Artillery.
Thomas Parr	,, ,,	21 July 1846	55th Foot.
Robert Lewins, M.D. ..	3 Mar. 1854	13 Dec. 1842	Staff.
William Barrett, M.B. ..	28 ,, ,,	20 Oct. 1843	Staff.
George William Powell ..	,, ,,	20 Aug. 1844	Staff.
Hampden Hugh Massy, M.D.	,, ,,	22 Nov. ,,	Staff.
William Munro	5 May 1854	6 Dec. ,,	93rd Foot.
George Augustus Frederick Shelton, M.B.	,, ,,	3 Jan. 1845	48th Foot.

SURGEONS—*continued.*

NAME.	Date of Commission.	Date of Entry into the Service.	Service.
James Mee	5 May 1854	28 Mar. 1845	44th Foot.
William George Swan, M.D.	21 July "	28 Feb. "	1st Bat., 16th Foot.
Wm. Fredk. Torcato Ivey	15 Aug. "	30 May "	Staff.
Fras. Hastings Baxter, M.D.	" "	11 July "	12th Lancers.
William Ker Park	6 Oct. "	31 Oct. "	16th Lancers.
Henry Kendall, M.D.	" "	16 Dec. "	7th Hussars.
George Saunders	20 " "	" "	Staff.
Thomas Moorhead, M.D.	3 Nov. "	24 Oct. "	Staff.
David Stuart Erskine Bain, M.D.	" "	23 Jan. 1846	Staff.
William Hanbury	" "	3 April "	33rd Foot.
Edward Baily Tuson	10 " "	20 Aug. 1844	2nd Bat., 17th Foot.
Henry March Webb, M.D.	8 Dec. "	23 Sept. 1845	18th Hussars.
Usher Williamson Evans, M.D.	" "	3 April 1846	61st Foot.
William Simpson, M.D.	" "	1 May "	71st Foot.
Michael Fenton Manifold	" "	22 " "	34th Foot.
Daniel Paterson Barry	" "	7 Aug. "	1st Bat., Mil. Train.
Edward Wm. Young, M.D.	" "	" "	1st Bat., 60th Rifles.
Francis Reynolds	" "	" "	3rd Bat., Mil. Train.
Richard Gilborne	" "	2 Oct. "	6th Dragoon Guards.
Wm. Holmes Jephson, M.D.	12 Jan. 1855	12 July 1844	1st Dragoon Guards.
Alexander Smith, M.D.	" "	7 Aug. 1846	47th Foot.
William Deeble	" "	27 Oct. "	56th Foot.
W. K. Chalmers	" "	13 Nov. "	Staff.
Thomas Frederick Wall	" "	20 " "	2nd Dragoon Guards.
Henry Fowle Smith, M.D.	" "	23 Mar. 1847	Staff.
Edwd. Wm. Bawtree, M.D.	19 " "	24 Nov. 1843	Staff.
Wellington Poole	9 Feb. "	1 Aug. 1845	54th Foot
James Edwd. Scott, M.D.	" "	11 June 1847	4th Bat., Rifle Brigade.
Thos. Connor O'Leary, M.B.	" "	6 Aug. "	Royal Artillery.
John Sheldon Furlong, M.D.	" "	19 Nov. "	42nd Foot.
Thomas Crawford, M.D.	" "	18 Feb. 1848	Staff.
Jenkin Homfray Llewelyn	" "	17 Mar. "	8th Hussars.
V.C. Anthony Dickson Home	" "	" "	Staff,
Edwd. Wm. Thos. Mandeville	16 " "	25 Sept. 1846	2nd Bat., 7th Foot.
Dudley Hanley, M.D.	" "	20 July 1847	Staff.
Thomas Fraser, M.D.	9 Mar. "	16 Dec. 1845	10th Hussars.
Edward Schaw Protheroe	16 " "	10 June "	Royal Artillery.
Stanhope Hunter Fasson, M.D.	23 " "	24 April 1846	Royal Artillery.
James Crerar	6 April "	3 Sept. 1847	Staff.
Robert Thornton	24 " "	6 July 1846	Staff.
Matbew Combe, M.D.	" "	20 " "	Royal Artillery.
Henry Shearly Sanders	" "	5 Mar. 1847	49th Foot.
James Leitch, M.D.	1 May "	23 Jan. 1846	41st Foot.
Charles Robert Robinson	" "	12 Nov. 1847	83rd Foot.
Wm. Johnstone Fyffe, M.D.	" "	27 Oct. 1848	Staff.
James Hamilton Bews	" "	1 Dec. "	Staff.
Jonas King Carr, M.D.	11 " "	24 July 1846	32nd Foot.
Patrick Joseph Clarke	" "	17 Mar. 1848	Staff.
Andrew Acres Stoney	" "	22 Dec. "	94th Foot.
Alexander McArthur, M.D.	" "	" "	2nd Bat., Mil. Train.
Philip Henry Eustace Cross	15 " "	" "	58th Foot.
Edwd. Jas. Franklyn, M.D.	" "	18 Sept. 1849	7th Dragoon Guards.
Henry Crisp, M.B.	22 June "	1 Oct. 1848	Staff.
Neil Henry Stewart, M.D.	" "	" "	98th Foot.
William Pearson Ward	26 " "	14 June 1847	Royal Artillery.
John Wm. Johnston, M.D.	29 " "	28 June 1844	85th Foot.
Alexander Mackay Macbeth	" "	21 July 1846	5th Bat., Mil. Train.
John Coghlan Haverty	" "	3 April 1849	52ndFoot.

SURGEONS—*continued.*

NAME.	Date of Commission.	Date of Entry into the Service.	Service.
George Smyth King, M.D.	29 June 1855	3 April 1849	1st Bat., 14th Foot.
John Gorringe, M.D.	,, ,,	,, ,,	1st Bat., 4th Foot.
John Small	10 July ,,	30 Dec. 1845	2nd Bat., 13th Foot.
Henry Day Fowler	20 ,, ,,	19 ,, ,,	82nd Foot.
William Thomas Black	,, ,,	25 Sept. 1846	2nd Bat., 11th Foot.
John Rambaut, M.D.	,, ,,	29 Jan. 1847	Royal Canadian Rifles.
John And. Woolfreyes, M.D.	,, ,,	13 July ,,	6th Bat., Mil. Train.
Charles Walter Poulton	,, ,,	8 June 1849	Staff.
Daniel John Doherty	,, ,,	28 Aug. ,,	1st Bat., 13th Foot.
William Perry	,, ,,	13 Sept. ,,	Royal Artillery.
James Fraser, M.D.	25 Sept. ,,	1 July 1848	50th Foot.
Andrew Leith Adams, M.D.	,, ,,	20 Oct. ,,	1st Bat., 22nd Foot.
Edward Gilborne	5 Nov. ,,	28 Aug. 1844	Royal Artillery.
John Riggs Miller Lewis, M.D.	7 Dec. ,,	11 Feb. 1848	Royal Artillery.
Thomas Park	21 ,, ,,	13 Sept. 1849	Royal Artillery.
Raphael Woolman Read	28 ,, ,,	31 May 1844	30th Foot.
Gavin Ainslie Turnbull	,, ,,	15 Mar. 1850	6th Dragoons.
John Duff, M.D.	8 Jan. 1856	11 May 1849	Royal Artillery.
John Coates, M.D.	25 ,, ,,	16 Nov. 1849	26th Foot.
John Alexander William Thompson, M.D.	26 Feb. ,,	19 ,, 1844	80th Foot.
Henry Vereker Bindon, M.D.	25 May ,,	12 June 1846	Staff.
Richard Edward FitzGibbon	22 July ,,	10 Jan. 1851	60th Rifles.
Thomas Ligertwood, M.B.	20 Oct. ,,	20 Oct. ,,	4th Hussars.
John Hendley	5 Dec. ,,	14 Mar. ,,	1st Bat., 7th Foot.
Chas. Hunter Fasson, M.D.	19 Feb. 1857	12 July 1844	1st Bat., 17th Foot.
Frederick Robinson, M.D.	20 Mar. ,,	19 Nov. 1847	1st Bat., Scots Fus. Gds.
Richard Domenichetti, M.D.	10 June ,,	3 April 1846	75th Foot.
Alexander Peile Cahill, M.D.	28 Aug. ,,	,, ,,	1st Bat., 6th Foot.
John James Clifford, M.D.	,, ,,	7 Aug. ,,	9th Lancers.
William Lapsley	,, ,,	,, ,,	Staff.
James Davys	4 Sept. ,,	9 Sept. 1851	38th Foot.
Thomas Esmonde White, M.D.	2 Oct. ,,	26 Sept. 1845	65th Foot.
Alex. G. Montgomery	,, ,,	9 Dec. ,,	Staff.
Henry Fredk. Robertson	,, ,,	19 Dec. ,,	40th Foot.
Brinsley Nicholson, M.D.	,, ,,	25 Sept. 1846	Staff.
John Madden	,, ,,	2 Oct. ,,	2nd Bat., 8th Foot.
James William Fleming	,, ,,	27 ,, ,,	37th Foot.
Joseph Thomas La Presle	,, ,,	29 Dec. ,,	3rd Bat., Rifle Brigade.
Gordon Kenmure Hardie, M.D.	,, ,,	12 Feb. 1847	73rd Foot.
Henry Higgins Jones, M.D.	,, ,,	10 Dec. ,,	86th Foot.
James Lewis Holloway	,, ,,	17 Mar. 1848	2nd Bat., 24th Foot.
James Kellie, M.D.	,, ,,	5 May ,,	17th Lancers.
David Field Rennie, M.D.	,, ,,	19 July ,,	Staff.
Jas. Edwd. Clutterbuck, M.D.	,, ,,	22 Dec. ,,	Staff.
Grahame Auchinleck, M.D.	,, ,,	,, ,,	81st Foot.
Frederick Douglas, M.D.	,, ,,	30 Mar. 1849	2nd Bat., 10th Foot.
Henry Martyn Fraser, M.D.	,, ,,	15 June ,,	2nd Bat., Rifle Brigade.
George Wm. Peake, M.D.	,, ,,	3 Aug. ,,	2nd Bat., 18th Foot.
Arthur Rudge	,, ,,	13 Sept. ,,	Royal Artillery.
Edward Touch, M.D.	,, ,,	25 ,, ,,	46th Foot.
John Irvine, M.D.	,, ,,	16 Nov. ,,	Staff.
John Gibbons	3 Nov. ,,	22 Mar. 1850	95th Foot.
Richard Cooper Todd	,, ,,	19 April ,,	4th Bat., 60th Rifles.
Jones Lamprey, M.B.	,, ,,	7 June ,,	67th Foot.
Robert McNab, M.D.	26 Jan. 1858	24 Sept. ,,	53rd Foot.
Robt. Beresford Smyth, M.D.	,, ,,	8 Oct. ,,	2nd Bat., 22nd Foot.
Daniel Macqueen, M.D.	,, ,,	5 Nov. ,,	Staff.
Howell Walters Voss	,, ,,	3 Jan. 1851	Royal Artillery.
James Carroll, M.D.	,, ,,	,, ,,	1st Bat., 9th Foot.

SURGEONS—*continued.*

NAME.	Date of Commission.	Date of Entry into the Service.	Service.
Dudley Clifton Wodsworth	26 Jan. 1858	10 Jan. 1851	Staff.
William Sim Murray, M.B.	,, ,,	,, ,,	66th Foot.
William Armstrong	,, ,,	,, ,,	2nd Bat., 9th Foot.
George Peacocke, M.D.	,, ,,	,, ,,	Staff.
Thomas Carey	,, ,,	24 Jan. ,,	87th Foot.
Archibald Henry Fraser	,, ,,	21 Feb. ,,	88th Foot.
George Edwin Gains	,, ,,	,, ,,	2nd Bat., 6th Foot.
John Edward Moffatt	,, ,,	14 Mar. ,,	Staff.
Henry Bolton Hassard	,, ,,	,, ,,	1st Bat., 19th Foot.
Charles William Woodroffe	26 June ,,	21 ,, ,,	2nd Bat., 1st Foot.
Benjamin Tydd	16 July ,,	25 April ,,	2nd Bat., 23rd Foot.
George Pain	30 ,, ,,	8 May ,,	Royal Artillery.
William James Ingham	24 Aug. ,,	9 ,, ,,	Staff.
Francis Holton, M.B.	,, ,,	14 ,, ,,	77th Foot.
William Boyd	7 Sept. ,,	20 Feb. 1852	90th Foot.
Thomas Bassett Reid	5 Oct. ,,	16 May 1851	Staff.
Thomas Blatherwick	31 Dec. ,,	4 June 1847	Staff.
John Knox Leet	,, ,,	20 May 1851	Cape Mounted Rifles.
Wm. Arthur Thomson, M.B.	,, ,,	4 Sept. ,,	27th Foot.
George Paul Minchin Woodward, M.D.	,, ,,	12 ,, ,,	2nd Bat., 20th Foot.
Alexander Scott Fogo, M.D.	,, ,,	7 Oct. ,,	Royal Artillery.
Robert Thomas Buckle, M.D.	,, ,,	14 Oct. 1851	2nd Bat., 15th Foot.
C. M. M. Miller, M.D.	,, ,,	17 ,, ,,	Staff.
Francis Cogan	,, ,,	18 Nov. ,,	Staff.
Patrick McDermott, M.D.	,, ,,	25 ,, ,,	Staff.
John Lyster Jameson	,, ,,	15 Dec. ,,	Staff.
Arthur Bell	,, ,,	2 Jan. 1852	36th Foot.
Chas. Thompson Abbott, M.B.	,, ,,	18 Mar. 1853	39th Foot.
Thomas Llewellyn Nash, M.D.	18 Jan. 1859	14 Feb. 1852	Royal Artillery.
Theodore Gordon Bone, M.D.	,, ,,	17 ,, ,,	Staff.
Donald Sinclair Smith	28 ,, ,,	27 ,, ,,	Staff.
Henry Bowles Franklin, M.D.	11 Mar. ,,	10 Mar. ,,	1st Bat., 10th Foot.
John Phillips Cunningham, M.D.	,, ,,	April ,,	2nd Bat., 60th Rifles.
Thomas George FitzGerald	8 April ,,	,, ,,	Staff.
John O'Nial	5 May ,,	,, ,,	51st Foot.
Duncan Robertson Rennie	18 Nov. ,,	27 ,, ,,	31st Foot.
Cornelius Clark Rutherford	2 Dec. ,,	7 May ,,	13th Hussars.
William Skeen, M.D.	13 ,, ,,	8 Mar. 1855	Staff.
Patrick Andrew McDermott	16 ,, ,,	27 Sept. ,,	Staff.
Frederick George Kerin	31 July 1860	1 July 1848	2nd Life Guards.
Thomas Clark Brady	11 Sept. ,,	9 May 1852	8th Foot.
John Smith Chartres	,, ,,	,, ,,	100th Regiment.
Benjamin Lane	,, ,,	3 July ,,	2nd Bat., 4th Foot.
Arthur Jackson Greer	,, ,,	,, ,,	1st Bat., 21st Foot.
Thomas William Fox, M.B.	18 ,, ,,	5 ,, ,,	Royal Engineers.
John Meane	21 ,, ,,	5 Nov. ,,	Staff.
Thomas Knox Birnie	25 ,, ,,	23 ,, ,,	2nd Bat., 12th Foot.
Alexander Fisher Bartley	,, ,,	23 Dec. ,,	1st Bat., 12th Foot.
John Alex. McMunn, M.D.	16 Nov. ,,	1 Jan. 1853	Staff.
John James Scott	,, ,,	21 ,, ,,	Staff.
William Snell	15 Feb. 1861	6 May ,,	99th Foot.
Curtiss Martin	22 ,, ,,	15 Feb. 1855	Staff.
Augustus Morphew	18 June ,,	18 Jan. 1856	Staff.
Charles O'Callaghan	6 Aug. ,,	15 Dec. 1854	Staff.
Watkin Sandom Whylock, M.D.	14 Jan. 1862	6 Nov. 1852	Staff.
Joseph Coleman Hornsby Wright, M.D.	,, ,,	8 ,, ,,	Staff.
Robert Speedy	,, ,,	11 Mar. 1853	45th Foot.

SURGEONS—*continued.*

NAME.	Date of Commission.	Date of Entry into the Service.	Service.
James Nicholas Bell, M.D..	14 Jan. 1862	1 April 1853	2nd Bat., 5th Foot.
Johnston Ferguson	,, ,,	22 ,, ,,	Staff.
William Alex. Mackinnon ..	28 ,, ,,	18 Feb. 1853	57th Foot.
William Tydd Harding ..	,, ,,	13 May 1853	2nd Bat., 19th Foot.
William Beale Wallis ..	,, ,,	27 ,, ,,	Staff.
Digby William Lawlor ..	,, ,,	10 June ,,	1st Bat., 25th Foot.
Joshua Henry Porter ..	18 Feb. ,,	17 ,, ,,	97th Foot.
Alexander Clark Ross, M.D.	16 May ,,	1 July ,,	92nd Foot.
John Bradshaw	10 June ,,	7 May 1858	Staff.
John Ogilvy, M.D.	8 July ,,	15 July 1853	Staff.
Augustus Frederick Turner..	,, ,,	26 ,, ,,	43rd Foot.
William Stewart, M.D. ..	,, ,,	29 ,, ,,	1st Bat., 18th Foot.
Wm. Mackenzie Skues, M.D.	,, ,,	,, ,,	Staff.
George Calvert	18 ,, ,,	1 Feb. 1859	Staff.
James Sinclair, M.D. ..	29 ,, ,,	5 Aug. 1853	Staff.
William Sinclair, M.D. ..	,, ,,	2 Sept. ,,	Staff.
H. S. E. Schroeder, M.D. ..	2 Dec. ,,	1 Mar. 1859	Staff.
Charles Vidler Cay	9 Jan. 1863	12 June 1846	Coldstream Guards.
Frederick Oakes	13 Feb. ,,	27 Feb. 1856	Staff.
James Arthur Hanbury, M.B.	20 ,, ,,	30 Sept. 1853	63rd Foot.
Robert Fleetwood Andrews..	3 Mar. ,,	,, ,,	5th Lancers.
Owen W. George, M.D. ..	14 April ,,	6 June 1851	1st Life Guards.
William Alex. White, M.D.	5 May ,,	18 Oct. 1853	Royal Artillery.
Duncan A. C. Fraser, M.D..	,, ,,	28 ,, ,,	Staff.
Frederick Wm. Moore ..	,, ,,	,, ,,	Staff.
John Elden Young, M.D. ..	12 ,, ,,	,, ,,	Staff.
Thomas Ravenscroft Whitty	12 ,, ,,	11 Nov. ,,	Staff.
John Clarke, M.D.	22 ,, ,,	13 Dec. ,,	Staff.
John Coote Ovens	12 June ,,	16 ,, ,,	5th Dragoon Guards.
John Halyburton Ross, M.B.	28 Aug. ,,	,, ,,	Staff.
Thomas M. Bleckley ..	22 Sept. ,,	6 Jan. 1854	Staff.
Walter Moses Gibaut ..	,, ,,	3 Feb. ,,	Staff.
Edward Gregg Noot.. ..	17 Nov. ,,	10 ,, ,,	2nd Bat., 2nd Foot.
Robert Menzies	,, ,,	24 ,, ,,	4th Bat., Mil. Train.
Chamney Graves Irwin, M.B.	1 Dec. ,,	,, ,,	Staff.
Jas. Balfour Cockburn, M.D.	8 Jan. 1864	3 Mar. ,,	Royal Engineers.
Peter Davidson, M.D. ..	15 ,, ,,	5 Aug. 1853	Staff.
Thomas R. Williams, M.B..	,, ,,	24 Mar. 1854	Staff.
John Henry West, M.D. ..	16 Feb. ,,	,, ,,	Staff.
James Henry Lewis.. ..	8 Mar. ,,	,, ,,	Staff.

ASSISTANT-SURGEONS.

NAME.	Date of Commission.	Service.
David O'Hoile, M.D.	20 Sept. 1851	Staff.
Arthur Guy Elkington	11 Mar. 1853	2nd Bat., Scots Fus. Guards.
Constantine Caridi Read	13 May ,,	3rd Bat., Grenadier Guards.
Henry John H. Lawrence	24 Feb. 1854	1st Bat., Grenadier Guards.
St. John Stanley	,, ,,	3rd Dragoon Guards.
Francis Bramley Baker	3 Mar. ,,	1st Bat., Scots Fus. Guards.
John By Cole Reade..	24 ,, ,,	2nd Bat. Rifle Brigade.
Andrew Knox Drysdale	,, ,,	Staff.
William Marshall Webb	28 ,, ,,	Staff.
William Wilson Mills	,, ,,	63rd Foot.
Edward M. Sinclair, M.D.	,, ,,	97th Foot.
Charles James White	,, ,,	12th Lancers.
William Cattell	,, ,,	5th Dragoon Guards.

ASSISTANT-SURGEONS—*continued.*

NAME.	Date of Commission.	Service.
Ormsby Bowen Miller	28 Mar. 1854	11th Dragoons.
William A. Davidson, M.D.	„ „	Staff.
Lancelot Armstrong	7 April „	13th Hussars.
James Ekin, M.B.	„ „	1st Bat., 4th Foot.
Alfred Malpas Tippetts	„ „	Staff.
David Milroy, M.D.	„ „	30th Foot.
David Woods	„ „	Staff.
James Hannan	„ „	49th Foot.
Thomas Clark	„ „	33rd Foot.
William Younge Jeeves	„ „	Royal Artillery.
Frederick Tydd Abbott	„ „	41st Foot.
Alexander Maclean	„ „	Royal Artillery.
George Frederick Davis	„ „	50th Foot.
Alexander Humfrey	„ „	Staff.
Edward Louis Lundy	„ „	Staff.
William Henry Pollard, B.A.	„ „	Royal Artillery.
Thomas Wright	21 „ „	38th Foot.
Thomas John Murphy, M.A.	28 „ „	Staff.
Peter Nevile Jackson	„ „	1st Bat., 13th Foot.
Francis S. Bennet-Francois de Chaumont, M.D.	„ „	Staff.
Alexander Guthrie, M.D.	„ „	3rd Bat., Rifle Brigade.
Edward Young Kellett	„ „	Staff.
Robert Augustus Chapple	„ „	Royal Artillery.
Charles Ricketts	„ „	1st Bat., 7th Foot.
Lucas George Hooper	„ „	10th Hussars.
Adam Graham Young	5 May „	2nd Bat., 60th Rifles.
Robert Atkinson	„ „	Staff.
Charles Carroll Dempster	„ „	Staff.
John Joseph Mulock	„ „	1st Dragoons.
Samuel Joseph Bayfield	„ „	Staff.
Stephen Massett Webb, M.D.	19 „ „	36th Foot.
Allen Bryson, M.D.	„ „	Staff.
Henry Turner	„ „	2nd Bat., Scots Fus. Guards.
Robert Wyatt Meadows	26 „ „	Canadian Rifles.
Alexander Reid	„ „	Staff.
Robert William Jackson	„ „	86th Foot.
Robert Watson	„ „	4th Bat., Military Train.
Richard Hungerford	„ „	Staff.
Alexander Robert Hudson, M.B.	„ „	1st Bat., 6th Foot.
William Menzies Calder	„ „	Staff.
William Henry Price	„ „	89th Foot.
William Jasper Rendell	„ „	55th Foot.
Thomas Sheehy, M.D.	„ „	1st Bat., 7th Foot.
George Youell	„ „	Staff.
Henry Titterton, M.D.	„ „	Staff.
Duncan C. Taylor, M.D.	„ „	Staff.
Leonard Kidd, M.B.	„ „	27th Foot.
John William Trotter	„ „	2nd Bat., Coldstream Guards.
John Tulloch	7 June „	Staff.
Wallace Haward	„ „	Staff.
George Floyer Bankes Arden	9 „ „	1st Bat., 12th Foot.
George Bell Popplewell	„ „	Staff.
William Grantt, M.B.	„ „	31st Foot.
Samuel Stacy Skipton, M.D.	„ „	78th Foot.
James Petrie Street, M.D.	„ „	Staff.
Thomas Tarrant	16 June „	Royal Artillery.
Alfred Hooper	„ „	42nd Foot.
Exham Long Hiffernan	„ „	1st Bat., 5th Foot.
Edward Thiselton	20 „ „	Staff.
Leslie Ogilby Patterson	„ „	Canadian Rifles.

ASSISTANT-SURGEONS—*continued.*

NAME.	Date of Commission.	Service.
Edmund Humphrey Roberts	23 June 1854	Staff.
James Hornidge Finnemore	" "	Royal Artillery.
George Allan Hutton	" "	60th Foot.
Alexander Dudgeon Gulland	" "	Royal Artillery.
Thomas Teevan	30 " "	1st Bat., 3rd Foot.
John Sparrow	" "	Staff.
William Hemphill, M.D.	14 July "	Staff.
Richard C. Lofthouse, M.D.	" "	14th Dragoons.
Joseph John Thompson	" "	Ceylon Rifles.
Daniel O'Donovan, M.D.	" "	Staff.
Joseph Barker	15 " "	Royal Artillery.
Henry Clifford	" "	Royal Artillery.
Hamilton Mitchell	21 " "	96th Foot.
Rowland Winburn Carter	28 " "	82nd Foot.
Richard Wolseley	" "	Staff.
Ralph Robert Scott	" "	8th Hussars.
Francis Odell	" "	Staff.
William Ramsay Stewart	11 Aug. "	Royal Artillery.
John Crown Agnis	" "	Royal Horse Guards.
Charles James Davenport, M.D.	15 " "	6th Dragoon Guards.
Jos. Fletcher Longheed	" "	Staff.
Francis Collins, M.D.	1 Sept. "	Royal Military College.
John Low Erskine, M.D.	" "	Royal Engineers.
William Thomas Paliologus	" "	Staff.
Theophilus Dolan	" "	Staff.
David Cullen, M.D.	" "	17th Dragoons.
Richard William Meade	" "	88th Foot.
William Ferguson	22 " "	Royal Engineers.
Michael James Griffin	" "	Staff.
William Macnamara	6 Oct. "	4th Dragoon Guards.
George Henry Finlay	" "	Staff.
John Vernon Seddall, M.D.	13 " "	Staff.
John Carleton Clery	" "	9th Dragoons.
John Henry Hearn	" "	Royal Artillery.
Joseph Johnston, M.D.	27 " "	26th Foot.
Arthur E. T. Longhurst, M.D.	" "	Staff.
Augustus P. M. Corbett, M.D.	" "	Royal Artillery.
Sydney Alder	3 Nov. "	62nd Foot.
James Crosse Johnston	" "	Royal Artillery.
Tertius Ball, M.D.	" "	36th Foot.
Thomas Smith Hollingsworth	" "	Royal Engineers.
John Martin Hyde	" "	84th Foot.
Jeffry Allen Marston, M.D	10 " "	Royal Artillery.
Andrew Semple, M.D.	" "	Staff.
Gilbert Prout Girdwood	24 " "	1st Bat., Grenadier Guards.
Walter Leach	" "	Staff.
Oliver Barnett	" "	6th Dragoons.
William Henry Yates	" "	Staff.
Francis Henry Macfadin	1 Dec. "	1st Bat., 11th Foot.
William Fleming Cullen	" "	Staff.
William Carden Roe	" "	Staff.
George Monlas Slaughter	13 " "	Staff.
James McNeill Beatty	14 " "	98th Foot.
John Wild Hulseberg	" "	1st Bat., 1st Foot.
T. E. Hale, M.D., B.A.	" "	1st Bat., 7th Foot.
Charles Dodgson Madden	" "	Royal Artillery.
Sampson Roch	" "	Royal Artillery.
William Henry Corbett, M.D.	15 " "	Staff.
Randolph Webb	" "	Royal Artillery.
James Jardine, M.D.	" "	Staff.
Henry Sherlock	" "	8th Dragoons.

ASSISTANT-SURGEONS—*continued.*

NAME.	Date of Commission.	Service.
William Ramsay, M.D.	15 Dec. 1854	Staff.
Stephen Henry Dickerson	23 „ „	Royal Artillery.
George McGusty Carolan	„ „	Staff.
Herbert Chalmers Miles	„ „	Royal Artillery.
William Ralph Lane	29 „ „	2nd Bat., Grenadier Guards.
Henry Lloyd Randell	5 Jan. 1855	Royal Engineers.
John George Faught	„ „	Staff.
Clement Williams	„ „	68th Foot.
Edward McGill, M.D.	8 „ „	7th Dragoon Guards.
John Michael	10 „ „	Staff.
John Wood	„ „	Staff.
Thomas Jerram Orton	17 „ „	Royal Artillery.
Patrick Kilgour	„ „	Staff.
William Henry Muschamp	23 „ „	Staff.
Alfred Jos. Lumby Hepworth	26 „ „	Royal Artillery.
George Perry	29 „ „	1st Bat., Scots Fus. Guards.
Edwin James Hopwood	„ „	Royal Artillery.
Stewart Aaron Lithgow	3 Feb. „	3rd Dragoon Guards.
Emil Becher, M.D.	13 „ „	104th Regiment.
Morgan Jones Jones	15 „ „	Staff.
William George Nicholas Manley	20 „ „	Royal Artillery.
Andrew Robertson Smith	21 „ „	Royal Artillery.
Thomas Stawell Barry	22 „ „	Staff.
Robert Henry Beale	„ „	53rd Foot.
Frederick Mackenzie Skues	28 „ „	Staff.
Henry Joseph Rose	6 Mar. „	1st Bat., 2nd Foot.
William Henry Harris	10 „ „	32nd Foot.
Charles Alex. Innes, M.D.	14 „ „	16th Lancers.
John Copeland Knipe	„ „	Staff.
Charles John Kirwan	20 „ „	Staff.
John Noble Shipton	23 „ „	2nd Dragoon Guards.
𝔙.ℭ. V. M. McMaster, M.D.	27 „ „	6th Dragoons.
Alfred Hoyte	„ „	61st Foot.
Thomas Kennedy	30 „ „	Staff.
Nathaniel Norris	2 April „	Staff.
James Robert Crawford	„ „	Staff.
John Whittle Rimmer	„ „	Royal Artillery.
George Baly	4 „ „	Staff.
Joseph Watts	5 „ „	1st Dragoon Guards.
George Thomas Bourke	8 „ „	51st Foot.
David Stranaghan, M.D.	„ „	Staff.
Alexander Robert Kilroy	12 „ „	33rd Foot.
Bradford Stiles	14 „ „	40th Foot.
Charles Moore Jessop	17 „ „	Staff.
Robert Turner	„ „	Staff.
William Robert Burkitt	„ „	74th Foot.
John Harrison Robotham	23 „ „	7th Dragoon Guards.
William Langford Farmer	24 „ „	29th Foot.
Andrew Knox Rickards	„ „	Royal Artillery.
William Fletcher	4 May „	Royal Artillery.
John Denis Healy	5 „ „	1st Bat., 15th Foot.
William Henry Leslie, M.D.	7 „ „	48th Foot.
John Folliott	„ „	51st Foot.
George Langford Hinde	15 „ „	Staff.
Jno. Henry Gouldsbury Meares	16 „ „	Royal Engineers.
Richard Uniacke Cashman, M.D.	18 „ „	Royal Artillery.
Edwin Wilson	19 „ „	4th Dragoons.
Alex. Crawford Robertson	1 June „	Royal Artillery.
William Sharpe	6 July „	Staff.
James Alfred Turner	7 „ „	Royal Artillery.
James Kelly	7 „ „	Staff.

ASSISTANT-SURGEONS—*continued.*

NAME.	Date of Commission.	Service.
Thomas John Tucker	18 July 1855	2nd Bat., 10th Foot.
Samuel Fuller	23 „ „	17th Dragoons.
James Francis Deakin, M.D.	28 „ „	Staff.
Hector Ferguson	30 „ „	Staff.
Samuel Black Roe, M.B.	4 Aug. „	92nd Foot.
Francis John Shortt	6 „ „	Staff.
Henry Richard Lobb Veale, M.D.	14 „ „	Royal Artillery.
James Greig Leisk, M.B.	28 „ „	94th Foot.
Henry Alexander Gogarty	29 „ „	52nd Foot.
Henry Kelsall	8 Sept. „	1st Bat., 20th Foot.
Charles Christopher Piper	12 „ „	2nd Bat., 9th Foot.
William Collis	14 „ „	98th Foot.
Thomas Norton Hoysted	28 „ „	Staff.
Thos. Butler Power O'Brien	29 „ „	Staff.
Nicholas Ffolliott	13 Oct. „	Staff.
Edmund Greswold McDowell	6 Nov. „	Staff.
Benjamin Cowan Kerr	17 „ „	2nd Bat., 6th Foot.
Yorke Hobart Johnson	20 „ „	Staff.
John Goodwin	5 Dec. „	Staff.
James Bonnyman, M.B.	13 „ „	89th Foot.
Ebenezer John Hatchell	15 Jan. 1856	Staff.
John James Henry	18 „ „	43rd Foot.
William Barry	25 „ „	58th Foot.
John Mundy	4 Feb. „	1st Bat., 20th Foot.
Eugene Francis O'Leary	9 „ „	Royal Artillery.
Samuel Pratt Woodfull	„ „	Royal Artillery.
William O'Halloran	18 „ „	74th Foot.
Maximilian Grant, M.D.	10 Mar. 1857	2nd Life Guards.
George Palatiano, M.D.	8 April „	Staff.
Alex. Frederick Bradshaw	27 May „	2nd Bat., Rifle Brigade.
Edward Louis McSheehy, M.D.	„ „	Staff.
James Parr	28 „ „	3rd Dragoons.
James Bowyer Baker	„ „	Staff.
Thomas Allen Thornhill, M.B.	„ „	7th Dragoons.
Robert Arthur Elliott	30 „ „	95th Foot.
Thomas Rawlings Mould	31 „ „	Royal Artillery.
John Wallace	2 June „	94th Foot.
Robert Lewer	1 Aug. „	Royal Artillery.
Edmund McGrath	„ „	Staff.
Arthur Chester	„ „	Royal Artillery.
Charles Henry Browne	„ „	15th Hussars.
Thomas Rudd, M.D.	„ „	2nd Dragoons.
Thomas Sharkey	„ „	Staff.
Frederick Ffolliott	„ „	1st Bat., 18th Foot.
George Samuel Burnside	„ „	51st Foot.
Alexander S. Russell, M.D.	„ „	27th Foot.
Richard Armstrong Hyde	17 „ „	2nd Bat., 20th Foot.
Edward Joseph Crane	18 „ „	90th Foot.
William Samuel Chapman	15 Sept. „	37th Foot.
Philip Broke Smith, M.D.	„ „	87th Foot.
David Chambers McFall	„ „	34th Foot.
Geo. Davidson Milne, M.D.	„ „	Royal Artillery.
Alex. Thorburn McGowan	„ „	Staff.
James Landale, M.D.	„ „	Staff.
William Silver Oliver, M.D.	„ „	4th Bat., 60th Rifles.
Alexander Watt Beveridge, M.D.	„ „	Staff.
John Henry Beath, M.D.	„ „	Staff.
William Ashton, M.B.	„ „	Staff.
George Whitla	„ „	Royal Artillery.
Robert Heard, M.D.	„ „	67th Foot.
Alexander Neill	„ „	65th Foot.

ASSISTANT-SURGEONS—*continued.*

NAME.	Date of Commission.	Service.
Eugene McShane	15 Sept. 1857	Staff.
James Marmaduke Taylor	" "	Royal Artillery.
Joseph Richard Kehoe	" "	2nd Bat., 16th Foot.
Henry Carden Herbert	" "	85th Foot.
Edward L'Estrange, M.D.	" "	Cape Mounted Rifles.
Robert Owen Hayden	" "	3rd Bat., 60th Rifles.
Robert Walter Clifton	28 " "	Royal Artillery.
Decimus F. de Hodgson, M.D.	" "	Royal Artillery.
David Shorter Skinner	" "	Staff.
Frederick William Wade	" "	3rd Bat., 60th Rifles.
Charles Mackinnon	" "	Staff.
James Good	3 Oct. "	Staff.
John Henderson Whittaker	" "	69th Foot.
Henry Foljambe Paterson	19 " "	Royal Artillery.
Robert David Burn, M.D.	" "	Royal Artillery.
Melville George Jones	" "	Royal Artillery.
Robert Sutherland	" "	5th Dragoons.
Henry Patrickson Gregory	" "	Staff.
Francis Madden	" "	69th Foot.
James Inkson, M.D.	" "	80th Foot.
John Gordon Grant	" "	48th Foot.
Daniel Murray, M.D.	" "	Staff.
Walter John	9 Nov. "	Staff.
James Jameson, M.D.	" "	47th Foot.
John Warren	" "	59th Foot.
William Tanner	" "	Royal Artillery
Henry Cole Peppin	" "	Staff.
George Bouchier	" "	93rd Foot.
Chas. Bartholomew Mathew	" "	54th Foot.
James Doran, M.D.	" "	Staff.
Byng Thomas Giraud, M.D.	" "	Staff.
James Whinyates George Allen	12 Nov. "	99th Foot.
Edward Brock	8 Dec. "	1st Foot.
William Sly	" "	34th Foot.
John T. M. Symons, M.D.	" "	Royal Artillery.
Michael Quinlan	" "	Staff.
Robert Thomas Scott	" "	73rd Foot.
William Gerard Don, M.D.	22 Jan. 1858	28th Foot.
William Cathcart Boyd	" "	Staff.
John Sarsfield Comyn	" "	Royal Artillery.
James McCrevey, M.D.	" "	66th Foot.
Charles Henry Leet	" "	Staff.
Edward Barrett Kearney	" "	Staff.
William Hillman	" "	Staff.
Ebenezer Miller, M.D.	" "	2nd Bat., 4th Foot.
William Jay	" "	Staff.
Alexander Macintyre, M.D.	" "	2nd Bat., 11th Foot.
Nicholas Loftus Gray	" "	2nd Bat., 13th Foot.
Thomas Bennett	" "	2nd Bat., 14th Foot.
Richard W. Saunders, M.D.,	" "	1st Bat., 16th Foot.
Edward Coffey	" "	2nd Bat., 15th Foot.
James Mackay, M.D.	18 Feb. "	Royal Artillery.
Wm. Henry Pickford, M.B.	19 " "	2nd Bat., Grenadier Guards.
Walter B. Ramsbotham, M.B	10 Mar. "	Staff.
Donald Macpherson	" "	2nd Bat., 19th Foot,
Edward Hardinge	" "	Royal Artillery,
William Curran	" "	88th Foot.
James Hinton	" "	Staff.
John Anderson, M.B.	" "	Staff.
James Davis	" "	57th Foot.
John Henry Hunt	" "	Staff.

ASSISTANT-SURGEONS—*continued.*

NAME.	Date of Commission.	Service.
Isaac Hoysted	10 Mar. 1858	1st Bat., 8th Foot.
Charles Hervé Giraud	,, ,,	Staff.
John Atkinson	,, ,,	5th Dragoons.
Hugh Deane Massy	,, ,,	Staff.
Francis Henry Preston	,, ,,	Staff.
George Ralph Tate, M.D.	17 ,, ,,	Royal Artillery.
Robert Spence	24 ,, ,,	Staff.
John Collins, M.D.	,, ,,	Staff.
William Isaac Spencer	22 April ,,	2nd Bat., 18th Foot.
Henry Knaggs	,, ,,	Cape Mounted Rifles.
Richard William Berkeley	,, ,,	Staff.
Charles Gray	,, ,,	Staff.
John Carlaw	,, ,,	Staff.
Frederick Pennington	,, ,,	Staff.
James Thompson	,, ,,	Staff.
James d'Altera	,, ,,	Royal Artillery.
Hampden Healey Maclean	,, ,,	Staff.
James Paxton, M.D	,, ,,	Staff.
Edward Hopkins	,, ,,	71st Foot.
Francis Levison Gower Gunn	23 ,, ,,	Staff.
Merrick Lloyd Burrows	30 ,, ,,	Staff.
FitzGerald Edward Scanlan	,, ,,	Staff.
Albert Stan. Knight Prescott	6 May ,,	Royal Artillery.
George Richard Woolhouse	7 ,, ,,	Staff.
Arthur Croker	,, ,,	Staff.
Arthur Henry Francis Lynch	,, ,,	Staff.
Joseph Salkeld Johnston, M.D.	,, ,,	Staff.
Thomas Turville Gardner	,, ,,	90th Foot.
Andrew Moffitt	25 ,, ,,	67th Foot.
John Colahan, M.D.	,, ,,	2nd Bat., 24th Foot.
Richard John Wm. Orton	,, ,,	76th Foot.
Charles Rattray, M.D.	,, ,,	Staff.
Joseph Bourke	,, ,,	Royal Artillery.
Thomas Walsh	,, ,,	2nd Bat., 21st Foot.
Peter Frederick Newland	,, ,,	Staff.
Julius Wiles	4 June ,,	Rifle Brigade.
John Alexander Lamb	22 ,, ,,	54th Foot.
William White	,, ,,	2nd Bat., 1st Foot.
Richard Beresford Carson, M.B.	,, ,,	Staff.
William Langworthy Baker	,, ,,	Staff.
Henry William Devlin	,, ,,	44th Foot.
Hugh Mackay Macbeth	,, ,,	91st Foot.
Thomas Michael O'Brien	,, ,,	95th Foot.
Horatio Scott	,, ,,	Staff.
John Henry Halhed Tothill	,, ,,	17th Foot.
George Alex. Moorhead	22 July ,,	66th Foot.
Joseph Edward O'Loughlin	5 Aug. ,,	Staff.
James Henry Jeffcoat	,, ,,	1st Bat., 9th Foot.
Frederic Murray Chalk	,, ,,	Staff.
Francis Roberts Hogg, M.D.	,, ,,	Royal Artillery.
John Mackenzie, M.D.	,, ,,	Staff.
John Davidge	,, ,,	Staff.
John Kinahan	,, ,,	44th Foot.
James George Stewart Mathison	,, ,,	Staff.
Samuel Argent	,, ,,	Staff.
Samuel Archer	,, ,,	98th Foot.
James Wilson, M.B.	,, ,,	2nd Bat., 3rd Foot.
Walter Crisp	,, ,,	Staff.
Edward Acton Gibbon	1 Sept. ,,	Staff.
Robert Cardiff Crean	,, ,,	Royal Artillery.
Robert Gillespie, M.D.	,, ,,	74th Foot.

ASSISTANT-SURGEONS—*continued.*

NAME.	Date of Commission.	Service.
Austin Jonas Ferguson	1 Sept. 1858	Staff.
John Robinson	22 ,, ,,	Royal Artillery.
St. John Killery	,, ,,	Staff.
Edward O'Connell	,, ,,	Staff.
Lancelot Andrews White	,, ,,	Ceylon Rifles.
Edmond Hoile, M.D.	,, ,,	Staff.
Thomas Alex. C. Macarthur	,, ,,	Staff.
William Alex. Gardiner	,, ,,	Staff.
Mathew Lawrence White	,, ,,	1st Bat., 1st Foot.
Richard White	,, ,,	1st Bat., 23rd Foot.
William Graves	,, ,,	Royal Artillery.
Tobias Barnwell	,, ,,	Rifle Brigade.
William Venour	,, ,,	46th Foot.
Charles Benjamin Mosse	8 Oct. ,,	Staff.
Langer Carey, M.D.	13 ,, ,,	Royal Artillery
John Stuart	,, ,,	2nd Bat., 13th Foot.
Joseph Vavasour Lane	,, ,,	2nd Bat., 4th Foot.
George Forbes Adams	,, ,,	Staff.
Alexander Richmond	,, ,,	Royal Artillery.
Thomas Walsh	,, ,,	12th Foot.
Francis Alfred Turton	,, ,,	1st Bat., 23rd Foot.
George Scott Davie, M.D.	1 Nov. ,,	79th Foot.
John Montgomery Fiddes, M.D.	,, ,,	Royal Artillery.
Francis Edward McFarland	,, ,,	77th Foot.
Thomas Ramsay	,, ,,	Staff.
William Temple, M.B.	,, ,,	Royal Artillery.
Wm. Kippen Stewart, M.D.	,, ,,	Staff.
Patrick Barret Kearney	,, ,,	Staff.
Henry Harrison	16 ,, ,,	Royal Artillery.
James Martin	,, ,,	Staff.
William Everet	,, ,,	39th Foot.
James Winterscale Lougheed	,, ,,	56th Foot.
Andrew Thomas Carbery	,, ,,	Staff.
Robert Austen Allen	23 ,, ,,	71st Foot.
Benjamin Burland, M.B.	1 Dec. ,,	Royal Artillery
Alfred Lewer	,, ,,	Royal Artillery.
Thomas Hession	,, ,,	70th Foot.
Edwin Wilkes	,, ,,	Staff.
George Edward Gascoyen	,, ,,	Staff.
William Robert Kerans	14 ,, ,,	99th Foot.
Edward Litton Low, M.B.	,, ,,	Staff.
Robert Lindsay, M.B.	,, ,,	Staff.
Thomas Murtagh	,, ,,	Staff.
John Greig, M.B.	,, ,,	2nd Bat., 23rd Foot.
George Park, M.D.	,, ,,	52nd Foot.
James Shand Duncan, M.D.	,, ,,	81st Foot.
Richard Henry	,, ,,	Staff.
Robert Muir Gilchrist, M.D.	,, ,,	Staff.
Edmund Thomas Palmer	12 Jan. 1859	Royal Artillery.
Charles William Griffith	,, ,,	Royal Artillery.
Alexander Allan, M.D.	,, ,,	2nd Bat., 17th Foot.
Robert Farquharson, M.D.	,, ,,	2nd Bat., Coldstream Gds.
Hunt Johnson Bailey	,, ,,	Staff.
Henry Walker	,, ,,	19th Foot.
William Hensman	,, ,,	20th Foot.
Charles Edmund Wikeley	,, ,,	1st Bat., 19th Foot.
Arthur Sanderson	,, ,,	Staff.
William Armstrong	,, ,,	25th Foot.
Alex. Campbell McTavish	,, ,,	3rd Bat., 60th Rifles.
George Arthur Grant	,, ,,	Royal Artillery.
Thomas Seward, M.D.	1 Feb. ,,	Staff.

ASSISTANT-SURGEONS—*continued.*

NAME.	Date of Commission.	Service.
James Watson	1st Feb. 1859	Staff.
James Edward Clark	,, ,,	2nd Bat., 22nd Foot.
James Dow Sainter	1 Mar. ,,	94th Foot.
Edwin Granville Ley, M.D.	,, ,,	Staff.
Edward Corrigan Markey	,, ,,	2nd Bat., 25th Foot.
William Millar	,, ,,	Staff.
Hunter Alexander Coghlan	,, ,,	1st Bat., 18th Foot.
King John Parr	,, ,,	Staff.
William Orr	,, ,,	1st Bat., 18th Foot.
Edward Parsonage, M.D.	,, ,,	64th Foot.
Joseph William Carter Neynoe Murphy	,, ,,	75th Foot.
Geo. Carson Gribbon, M.B.	20 April ,,	25th Foot.
George Cardell	,, ,,	Staff.
James Land, M.D.	,, ,,	21st Foot.
Morgan Stanislaus Grace, M.D.	,, ,,	Staff.
Charles Edward Smith, M.D.	,, ,,	Staff.
Alexander Jennings, M.D.	,, ,,	Staff.
Charles Wyat Watling	,, ,,	Staff.
Maurice Tracey	,, ,,	Staff.
George Simon	,, ,,	Staff.
Florence Theobald McCarthy	,, ,,	1st Bat., 23rd Foot.
Robert Tate, M.D.	,, ,,	Staff.
Sidney Keyworth Ray	,, ,,	Staff.
George Abraham Davidge	,, ,,	Staff.
Valentine Maher	,, ,,	Staff.
Alexander Edward Bartlet	,, ,,	Royal Artillery.
Robert Storey	,, ,,	Royal Artillery.
John Adsetts	13 June ,,	Royal Artillery.
Edward Harford Lloyd, M.B.	,, ,,	Staff.
James Young Donaldson	,, ,,	100th Regiment.
Oliver Codrington	,, ,,	Staff.
Edwin Drew	,, ,,	Staff.
John Adcock, M.D.	,, ,,	Staff.
Howison Y. Howison, M.D.	,, ,,	Staff.
George Frederick Spry	,, ,,	Staff.
John Thomas Milburn	,, ,,	Staff.
John Alfred Illingworth	,, ,,	Staff.
Robert Alex. Peter Grant	,, ,,	Staff.
Arthur Herbert Orpen	,, ,,	Staff.
Alexander Thomson, M.D.	,, ,,	Staff.
James A. B. Horton, M.D.	5 Sept. ,,	Staff.
Wm. Brough. Davies, M.D.	,, ,,	Staff.
Arthur Bowen Richards Myers	25 ,, ,,	1st Coldstream Guards.
James Tulloch Tulloch, M.D.	11 Oct. ,,	42nd Foot.
Arthur Charles Gaye	,, ,,	1st Bat., 4th Foot.
Wm. Evelyn Alston, M.D.	,, ,,	Staff.
Joseph Sumpner Joyner	,, ,,	89th Foot.
John Alexander Scott	,, ,,	Staff.
Arnold Royle	,, ,,	44th Foot.
William Dumville Smythe	,, ,,	Royal Artillery.
Thomas Wood, M.D.	,, ,,	45th Foot.
James Bell Jardine	,, ,,	1st Bat., 4th Foot.
John E. Stewart, M.D.	,, ,,	Staff.
Henry Cramer Guinness	,, ,,	Staff.
Alexander Oswald Cowan, M.D.	,, ,,	Royal Artillery.
William Creagh	15 ,, ,,	Royal Artillery.
Benjamin Hinde	22 Dec. ,,	Staff.
Austin Bruin	19 Jan. 1860	Staff.
Francis Falwasser	,, ,,	Staff.
Robert Waters, M.D.	,, ,,	Staff.

ASSISTANT-SURGEONS—*continued.*

NAME.	Date of Commission.		Service.
John Butler Hamilton, M.B.	19 Jan.	1860	Staff.
Edward Denham Tomlinson	"	"	Staff.
John James Chappell, M.D.	"	"	2nd Dragoon Guards
Matthew Jas. E. Fagan, M.D.	"	"	46th Foot.
William Cherry	"	"	1st Bat., 14th Foot.
Samuel Edward Maunsell	"	"	97th Foot.
William Traill, M.D.	"	"	91st Foot.
Nicholas Avent	"	"	66th Foot.
William Christy Robinson	"	"	34th Foot.
John Wales	"	"	Staff.
Joseph Francis Ashby	"	"	Staff.
James Robert Gaussen, M.B.	"	"	Staff.
John Livingston Power	"	"	97th Foot.
Patrick Walter Stafford	"	"	56th Foot.
Thomas Henry White, M.D.	"	"	80th Foot.
Thomas Quinlan	"	"	33rd Foot.
Owen Owen	"	"	Staff.
James Ferguson	"	"	Staff.
Edward James Boulton	"	"	Staff.
George Elmsley Will	"	"	Staff.
John Richard Thomas	17 July	"	Staff.
Chas. Henry Young Godwin	1 Oct.	"	38th Foot.
John Walters, M.B.	"	"	1 Bat., Rifle Brigade.
Franklin Gillespie, M.D.	"	"	35th Foot.
Albert Augustus Gore, M.D.	"	"	Staff.
Thomas Maunsell	"	"	48th Foot.
George Farr White	"	"	77th Foot.
Frederick Robert Wilson, M.B.	"	"	1 Bat., 20th Foot.
Nathaniel Alcock	"	"	35th Foot.
Donald M. Davidson, M.D.	"	"	35th Foot.
Robert Edward Heath, M.D.	"	"	88th Foot.
Robert Adams, M.D.	"	"	81st Foot.
Reginald Croft Lever, M.B.	"	"	7th Hussars.
Bronislaw J. Jazdowski, M.B.	"	"	93rd Foot.
James Thompson	"	"	Staff.
Caleb Sherar Wills	"	"	83rd Foot.
Robert De Burgh Riordan	"	"	38th Foot.
Thomas Young Baker	"	"	27th Foot.
John Henry Bracken	"	"	54th Foot.
Patrick Quinlan	"	"	90th Foot.
Frank Pout	"	"	46th Foot.
Patrick Charles Baxter, M.B.	"	"	93rd Foot.
Samuel Gamble White, M.D.	"	"	Staff.
Henry Lamb	"	"	Staff.
Henry Offley Harvey	"	"	1st Bat., 21st Foot.
Erskine Burnett Grant, M.D.	"	"	Staff.
William Robert Wall	"	"	81st Foot.
Thomas Pattison Flynn	"	"	Staff.
Charles Hamilton Harvey	1 Mar.	1861	Staff.
Alexander Long	"	"	Staff.
Augustus Fred. Elliot, M.D.	"	"	Staff.
John Waring Belcher, M.D.	1 April	"	Staff.
Francis Henry Welch	"	"	22nd Foot.
Robert Batho	"	"	Staff.
William Ironside, M.D.	"	"	71st Foot.
Francis Patrick Staples	"	"	19th Foot.
Joseph John Pope	"	"	72nd Foot.
Joseph Augustin Fitzpatrick	"	"	1st Dragoon Guards.
William Hill Climo, M.D.	"	"	Rifle Brigade.
Wm. James Wilson, M.D.	"	"	28th Foot.
Usher Beere Eaton, M.D.	"	"	Staff.

ASSISTANT-SURGEONS—*continued.*

NAME.	Date of Commission.	Service.
John Greig, M.D.	1 April 1861	Staff.
Walter Nethercoat Pell	,, ,,	Rifle Brigade.
Alfred F. Stafford Clarke, M.D.	,, ,,	42nd Foot.
Augustus Robinson Hall	,, ,,	52nd Foot.
James Watt, M.D.	,, ,,	95th Foot.
Edward Footner	,, ,,	72nd Foot.
Henry Stewart Lodge, M.B.	,, ,,	2nd Bat., 2nd Foot.
John Ross Murray, M.D.	15 June ,,	107th Foot.
Frank Simpson	1 Aug. ,,	Staff.
Edward McCarthy	20 Mar. 1862	Staff.
Thomas Parker Smith, M.B.	31 ,, ,,	104th Foot.
John Dustan	,, ,,	107th Foot.
John Elliott	,, ,,	Staff.
Acheson George Bartley, M.D.	,, ,,	101st Foot.
Henry Frank Hensman	,, ,,	Staff.
William James Tyrrell	,, ,,	102nd Foot.
John Barlow Hannah, M.D.	,, ,,	101st Foot.
Thomas Cecil Morgan	,, ,,	105th Foot.
Richard Patrick Ferguson	,, ,,	Staff.
Thomas Dodd Milburn	,, ,,	108th Foot.
Alex. Ferrier Churchill, M.D.	,, ,,	109th Foot.
John Stannard McAdam	,, ,,	Staff.
Edward Nicholson	,, ,,	Staff.
Richard Jones Owen, M.D.	,, ,,	Staff.
Samuel Rowe	16 April ,,	Staff.
Alfred John Belemore	,, ,,	Staff.
Allan Nesbitt Fox	,, ,,	Staff.
Wm. Nelson Duggan, M.D.	27 May ,,	Staff.
Joseph Gray	28 Aug. ,,	Staff.
Robert William Hooper, M.D.	2 Sept. ,,	Staff.
David Mackie, M.D.	1 Oct. ,,	2nd Bat., 7th Foot.
William George Ross, M.D.	,, ,,	2nd Bat., 8th Foot.
Richard William Hare, M.B.	,, ,,	80th Foot.
Charles S. Close	,, ,,	2nd Bat., 5th Foot.
Wilmot H. T. Power	,, ,,	Staff.
George Nicol Irvine, M.D.	,, ,,	79th Foot.
William H. B. Clapp, M.D.	,, ,,	Staff.
John Mangin Waters	,, ,,	82nd Foot.
James Dewar, M.D.	,, ,,	Staff.
Campbell M. Douglas, M.D.	,, ,,	1st Bat., 24th Foot.
Baynes Reed	,, ,,	1st Bat., 10th Foot.
Frederick H. Dunbar, M.D.	,, ,,	Staff.
John Edward Fannin	,, ,,	103rd Foot.
John Hamer Oliver	,, ,,	Staff.
Stephen Flood, M.B.	,, ,,	106th Foot.
Charles A. Maunsell, M.D.	,, ,,	Staff.
Nicol Carter	,, ,,	108th Foot.
Jos. L. Curtis	,, ,,	Staff.
W. Folliott	,, ,,	106th Foot.
Kenneth W. Cumming, M.D.	,, ,,	Staff.
Richard Hall, M.D.	,, ,,	103rd Foot.
Jos. Rutherford, M.B.	,, ,,	Staff.
Frederick B. Scott, M.D.	,, ,,	18th Hussars.
Ignatius McD. O'Farrell	,, ,,	108th Foot.
John Langdon	,, ,,	105th Foot.
Gough Ashton, M.B.	,, ,,	102nd Foot.
John Sandison	17 Mar. 1863	Staff.
Edward Chandler	14 April ,,	Staff.
Wm. Creyk, M.B.	,, ,,	Staff.
Edgcombe Venning	,, ,,	1st Life Guards.
Alexander Brebner, M.B.	,, ,,	55th Foot.

ASSISTANT-SURGEONS—*continued.*

NAME.	Date of Commission.	Service.
William Nash, M.D...	14 April 1863	Staff.
William E. Dudley	,, ,,	76th Foot.
Alexander Doig	,, ,,	Staff.
Henry Art. Martin, M.D.	,, ,,	Staff.
W. West Quinton, M.B.	,, ,,	Staff.
George W. McNalty, M.D.	,, ,,	Staff.
William T. Martin, M.D.	,, ,,	Staff.
John N. Davis	,, ,,	Staff.
William J. Page	,, ,,	Staff.
Frederick Ferguson, M.D.	,, ,,	Staff.
Richard G. Segrave	,, ,,	Staff.
John W. Heather	24 Sept. ,,	Staff.
A. A. Stewart, M.D...	,, ,,	Staff.
Robert William Troup, M.B. ..	30 ,, ,,	Staff.
William Raymond Kynsey	,, ,,	Staff.
Robert William Lawless	,, ,,	Staff.
James Forbes Beattie, M.D. ..	,, ,,	Staff.
Robert Jas. Blair Cunynghame, M.D.	,, ,,	Staff.
Alexander Thomson, M.D.	,, ,,	Staff.
Alexander Turner, M.D.	,, ,,	Staff.
Alexander Francis Preston, M.B. ..	,, ,,	Staff.
Richard Wm. Forsayeth	,, ,,	Staff.
John P. De G. Delmege, M.D. ..	,, ,,	Staff.
Charles McD. Cuffe	,, ,,	Staff.
Valesius S. Gouldsbury	,, ,,	Staff.
John Alexander Shaw, M.D. ..	,, ,,	Staff.
Charles Haines	,, ,,	Staff.
Forbes Dick, M.D.	,, ,,	Staff.
H. Currie Collier	,, ,,	Staff.
John Edward Barker, M.B... ..	,, ,,	Staff.
Jos. Ridge Greenhill..	,, ,,	Staff.
Hubert R. Greene	,, ,,	Staff.
Robert Henry Bolton	,, ,,	Staff.
Henry Morris..	,, ,,	Staff.
Philip P. Lyons, M.B.	,, ,,	Staff.
Edmund H. Condon, M.B.	,, ,,	Staff.
James Barker..	,, ,,	Staff.
James Barry, M.D.	,, ,,	Staff.
Charles Alfred Atkens	,, ,,	Staff.
William Patrick Smith	,, ,,	Staff.
George Fearon	,, ,,	Staff.
Christopher J. Weir, M.B.	,, ,,	Staff.
Francis Howard, M.D.	,, ,,	Staff.
Frederick Jos. Byrne..	,, ,,	Staff.
William Elgee	,, ,,	Staff.
Thomas White, M.B.	,, ,,	Staff.
Gordon Hammond, M.D.	16 Oct. ,,	Staff.
Alfred Lewis	24 Nov. ,,	Staff.
Thomas Moriarty, M.D.	24 Dec. ,,	Staff.
Tyler Oughton	24 Jan. 1864	Staff.

ROYAL MALTA FENCIBLE ARTILLERY.

Surgeon.—Ludovico Bernard, M.D. .. .. 9th May 1849.
Assistant-Surgeon.—Carmelo Ellul, M.D. .. 9th Aug. 1849.

PRINTED BY HARRISON AND SONS, FOR HER MAJESTY'S STATIONERY OFFICE.

RETURN to an Order of the Honourable The House of Commons,
dated 1 July 1864;—*for*,

REFORM CLUB
PALL MALL

A COPY

OF

STATISTICAL REPORT

OF THE

HEALTH OF THE NAVY,

FOR 1861.

(*Mr. Childers.*)

Ordered, by The House of Commons, *to be Printed,*
1 *July* 1864.

455.

PRELIMINARY OBSERVATIONS.

THE responsibilities of the naval medical officer are not limited to the care of those who present themselves labouring under disease, or suffering from injuries. His instructions especially point out that he is "to be attentive to every circumstance that may occur, or in any degree tend to affect the health of the ship's company;" and this duty, the efficient performance of which presupposes an intimate acquaintance with prophylaxis, or the science of the prevention of disease, is of the very first and highest importance. To do justice to the responsible office he holds, he must combine in an eminent degree in his own person the functions both of the ordinary professional attendant and of the sanitary officer. In the latter respect, indeed, his responsibilities are not only very great, but they are of a somewhat peculiar character, inasmuch as the community over which he has medical charge is almost constantly moving from place to place, continually changing its surrounding circumstances, and requiring, therefore, not only watchful care on his part, but such a knowledge of the topography of disease and of the conditions most likely to aid in its development, as can only be acquired by much study and careful observation. The necessity for this care and this knowledge is all the more urgent that those who are placed under his supervision are, by the very nature of the service, so crowded together, that any climatic influences acting on one must, to a greater or less extent, operate on all; and if disease of an infectious character be introduced amongst them, there are no circumstances in which it is more likely to spread, and none in which segregation of the infected is so difficult to accomplish.

The object of these Reports is not merely to furnish information of a purely statistical character, having reference only to numerical details connected with the numbers composing the force with which they deal, the numbers sick, invalided, or dead; they also serve to indicate, as far as possible, the probable causes of sickness and mortality in all localities where disease abounded in a more than ordinary degree, and they point out the measure of success which attended upon whatever steps might be taken to obviate them. They also show what means were employed to prevent disease when men were about to be placed in localities of a notoriously unhealthy character; and are thus, in so far, guides to the medical officer who may be placed in similar circumstances. They do not, however, in any way affect to enter into minute details concerning the treatment of disease.

In the present Report there is much interesting information, it is believed, upon these points. On the North American and West Indian Station we see yellow fever introduced into certain ships as a result of communication with infected ports. The warnings which year after year have been given as to the extreme danger of holding any intercourse with such localities have only again to be repeated. The sad intelligence that has lately reached us of the fearful ravages which yellow fever has committed at Bermuda, would also indicate the necessity of placing all ports known to be infected in strict quarantine, as regards our intertropical and other possessions, in which the necessary conditions exist for keeping alive this most fatal disease when once introduced into them. The spread of infectious disease is always in a large measure preventible, if the requisite steps be only taken in time.

On the Pacific Station there is the narrative of the introduction of specific fever into one ship, its extension amongst

amongst a certain class of patients, its propagation to another ship, and its persistence there in a similar manner amongst the same class of subjects; and although this fever did not prevail to a great extent, it caused much suffering, and, considering the numbers attacked, a large amount of mortality.

On the West Coast of Africa the necessity for conducting operations in the various rivers, was attended with a considerable amount of periodic fever. The numbers attacked, however, were much less than in all probability would have occurred but for the admirable prophylactic qualities of quinine, to which the medical officers pay so unanimous and grateful a tribute. To this same agent may in like manner be attributed the comparatively small mortality which resulted.

On the Cape of Good Hope Station some of the vessels employed in the Mozambique suffered much from exposure to various morbific influences. Fever in one ship, and dysentery in two vessels, prevailed epidemically. The cause of the fever and its nature are somewhat obscure. With regard to the dysentery, however, in one vessel it was ascribed to the water used at Mahé, the principal island of the Seychelle group, where the ship was when the disease appeared, and where the inhabitants were suffering from dysentery at the same time from using the same water, the employment of which, at that season of the year, is always attended by similar results. In the other vessel dysentery seems to have been introduced into the ship by a cargo of slaves temporarily placed on board of her, who were suffering to a fearful extent from the disease. In the one case the disease ceased when distilled water was procured, and in the other, when the slaves were landed, and the ship cleansed.

On the China Division of the East Indian Command smallpox prevailed epidemically in one ship, causing an immense amount of suffering, and considerable mortality. Of 144 persons attacked, 111 presented fair vaccination marks. This circumstance, while it in no degree impairs our confidence in the efficacy of vaccination, evidently suggests the necessity of an inquiry being made into the method in which primary vaccinations are performed; the degree of security that may be estimated to be conferred, as evidenced by a given vaccination cicatrix; the possibility of the most perfect vaccination having its protective influence exhausted in process of time; and the steps which it may be desirable to take in the endeavour to eradicate this hideous disease altogether from the service.

On the same Station, on the Japanese Coast, ophthalmia prevailed epidemically in four ships. This disease occasionally makes its appearance both amongst the Chinese and the Japanese; fortunately, it would appear to be of a very mild character: by some it was considered as being entirely dependent upon atmospheric agencies. It is worthy of notice, however, that in one of the ships where it commenced by attacking an engineer officer, it spread from him to his messmates, from them to their servants, and next to the stokers, before it became general amongst the ship's company, thus showing a decidedly infectious character.

These narratives are all very suggestive; they furnish information with regard to the possible risks that are to be run on certain stations, and they ought to be the means of ensuring provision to meet as far as possible all such contingencies. The naval medical officer, who is by the nature of the service frequently thrown entirely on his own resources, being far beyond the reach of consultation with his professional brethren, ought to have his plans clearly and distinctly arranged as to what steps he should take in the event of disease prevailing epidemically amongst those who are placed under his charge. He will thus be prepared coolly and methodically to grapple with every difficulty; he will have that faith in himself which begets confidence on the part of those who look to him for help in their extremity, and the probabilities are that many a valuable life will be saved, which would have been lost in the sudden outbreak of an unforeseen and unprepared-for calamity.

In the present Report, an Index of Ships is given at the conclusion of the Volume, with the Names of the respective Medical Officers who were serving in them during the year. This it has been thought may prove useful in various ways. The different Tables are exactly the same as in previous Reports.

Alex. E. Mackay, M.D., F.R.S.E.

Admiralty,
Somerset House,
26 October 1864.

REFORM CLUB
PALL MALL

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REFORM CLUB PALL MALL

HOME STATION.

Home Station.

In the Home Force, which consists of five separate commands, namely, the Nore, Portsmouth, Devonport, Cork, and the Channel, there were sixty-three vessels of every kind and denomination. The total mean force, corrected for time, amounted to about 22,900 men. A large proportion of these vessels were, however, newly commissioned, and destined to proceed to foreign stations as soon as they were fully manned and equipped for sea. While the others, with the exception of a few sea-going small craft and tenders to the respective flag ships, remained almost entirely in harbour at the respective head quarters of the command to which they were attached.

For instance, there were the flag ships at the respective ports, the guardships of steam reserve at Sheerness, Portsmouth and Plymouth; the reserve depôt ships, the gunnery ships and training ships. These ships, being undermanned, remained constantly in harbour. Then there were a few sea-going small craft, and the tenders to the respective flag ships, besides vessels that had been commissioned, and were destined to proceed to foreign stations so soon as they were fully manned and equipped for sea; and vessels of the Channel squadron, which were mostly employed at sea, though they sometimes remained in harbour for months at a time.

By Table No. 2 it will be seen that the sick rate in these vessels differed very widely, though this depended much on whether the sick were sent on shore to hospital, or retained on board for treatment. The number daily sick on board averaged about 651, but the total average, including men sick in hospital, amounted to 1,101.

It is shown in Table No. 1 that 24,525 cases of disease and injury were placed on the sick list; 715 were invalided,

Home Station.

and 220 died, the former being in the proportion of 31·2, and the latter of 9·6 to the 1,000 of mean force: compared with the preceding year, there is a slight increase in the ratio invalided, but the death-rate is considerably less.

In Table No. 2 the number of days' sickness from each disease, and from wounds and injuries, is shown, together with the average number of men sick per diem, and the ratio per 1,000 of mean force. The loss of service from primary fever was about equal to twenty men per diem, or nearly in the ratio of 1 per 1,000. From ague it was equal to about two, and from eruptive fevers, four, in every 10,000 respectively. Disease of the brain and nerves were productive of a loss equal to about twenty-seven men daily, or in the ratio of 1·2 per 1,000; and disease of the respiratory organs equal to 159 men, or seven per 1,000, the loss from catarrh alone being nearly equal to three per 1,000. The number daily sick of disease of the circulatory system amounted to nineteen, of diseases of the alimentary organs, twenty-two, and of the liver and spleen, seven. From disease of the genito-urinary system, the loss of service was about equal to 297 men, and of these, the proportion of 285 was due to venereal complaints, in which, compared with the preceding year, there is a large increase. The loss from rheumatism, gout, and diseases of the bones and joints, was equal to about eighty-five; from affections of the eyes and ears, from disease of the skin, cellular tissue, glands, &c., to about 284; and from dyspepsia, debility, and other unclassed complaints, about twenty-nine per diem. From wounds, injuries, burns, &c., the loss was equal to about 141. The total loss per diem from all causes amounted to 1,101, or in the ratio of 48·1 per 1,000 of mean force, an increase on the ratio of the preceding year by about eight per 1,000. It is much to be regretted that nearly a fourth of the total loss of services from disease and injury was caused by venereal complaints alone.

Fever.—Primary fever appears to have been more prevalent than during the previous year, with a corresponding increase in the number of deaths; but there is a large reduction in the number of cases of intermittent fever, from which, as on the previous year, there was no death.

The greatest number of cases occurred in the Britannia, the training ship for naval cadets, stationed in Portsmouth Harbour. For several years in succession, fevers of a typhoid type

Home Station.

type have occurred occasionally in this ship, especially amongst the cadets between October and March; but it is proper to observe that it has invariably been prevalent amongst the inhabitants of Gosport and Portsmouth at the same time. As it could not be ascribed to any cause within the ship, it was supposed by some that it might arise from effluvia or miasmata, in connexion with the mud and the sewage drains which discharge their contents into the Haslar and Gosport Creeks. This conjecture, however, was not borne out by the occurrence of the same kind of fever in other vessels equally exposed to the emanations from the mud and sewers, while it prevailed on shore at places far away from the mud. That the effluvia and miasmata may have acted as predisposing causes, there is no reason either to believe or to disbelieve; for although it is impossible to doubt that putrid emanations are offensive to health, yet in this instance they did not affect the health of the crew in the ship, nor the health of the crews of other ships lying close by, while the fever prevailed in localities where, in consequence of diffusion and distance, they could have had no influence whatever on health.

During the first quarter there were seven cases; during the second three, during the third four, and during the fourth or last eight, besides sixteen of a milder type, reported as cases of febricula. Of twenty-two cases of more severe form, fourteen were sent to Haslar Hospital; nine of the persons affected were cadets, and five belonged to the ship's company; three died.

A few cases of fever occurred in the Victory at the same port, and one died; but in the St. Vincent, with a crew averaging 240 men, there was only one case; while in the Asia there were nine, and three deaths; in the Illustrious there were no cases, but in the Excellent there were six and one death. In the Dasher, a small sea-going steamer, there was one death. In the Impregnable, the flag ship at Devonport, there were three cases of fever and one death. In the Royal Adelaide, the reserve depôt ship at the same port, there were twenty-one cases, but no death; in the Indus, the guardship of the steam reserve, there were six cases, one of which proved fatal; in the Cambridge there were only two cases, and no death; and in the Implacable, the training ship, there were three, and one death. In the smaller class of vessels of this command, there were a few cases of fever, but none died. In the Formidable, the flag ship at Sheerness,

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ness, there were three cases of ague, but none of primary fever; but in the Cumberland, the guard ship of steam reserve, there were thirteen cases of primary fever and nine of intermittent; three of the former died. In the Wellesley, the guard ship in ordinary at Chatham, there was only one case of fever.

With reference to the causes of febrile disease with which it was at one time assumed the mud and shores of the Southampton Water abounded, it is proper to notice, that there were only three very slight attacks of a primary character in the Dauntless, which remained there during the entire year, and not one of intermittent. In the Eagle, anchored during the entire year at the same place, there were thirteen cases of primary fever placed on the sick list; but only one of these was of a severe character; all the others are entered as cases of febricula.

In reference to the assumed sickness in the Britannia, the surgeon states it to be his belief "that there is as little sickness amongst these boys (the naval cadets), as there is amongst a like number elsewhere. It is true that in the last two years, 1859 and 1860, that is as long as this ship has been used for her present purpose, cases of fever have occurred both in the spring and towards the close of the autumn; mild at the former, but more severe at the latter period; and last autumn one of these cases proved fatal, while a second cadet died about the same time of typhus, following measles, but at both these seasons fever is always more or less prevalent; and though an attempt has been made to fix the cause of it on the mud of Haslar Creek, and on some cause existing in the ship, I consider there is no foundation for either opinion, or we should have had more cases amongst the ship's company."

Eruptive Fever.—There were thirty-five cases of small-pox, five of measles, and 115 of scarlatina: one case of small-pox terminated in death while under treatment in Haslar Hospital. The boy, who belonged to the Victory, in which there were eight cases, showed no mark of vaccination. The other cases were modified; one of the patients had formerly suffered from the same disease. Three cases occurred in the Excellent, at Portsmouth, in December, but, with one exception, they were mild. At Devonport there were four cases in the Cambridge, four in the Donegal, three in the Royal Adelaide, two in the Conqueror, one in the Jason, and one in the Revenge.

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Scarlatina was introduced amongst the boys in the training ship Implacable, at Devonport, on the 28th of November. The first boy attacked had been exposed to infection on shore near Keyham, where the disease was prevalent; he was immediately sent to the Naval Hospital, and no other cases occurred until the 6th of December, when it suddenly broke out, and began to spread with great rapidity; on that day nine cases occurred; on the 7th there were fifty-four, on the 8th six, and on the 9th ten, when it entirely ceased. All the patients were sent on shore to the Naval Hospital, where they rapidly recovered. In a large proportion of the cases the symptoms were extremely mild.

The same disease made its appearance in the Ajax, at Kingstown, in December, and nine additional cases were put on the sick list during January and February of the present year: one case terminated in dropsy, and ultimately in death. Five cases occurred in the Edgar, which appear to have been contracted at Portsmouth, and eight occurred in the Cumberland, at Sheerness, during the Christmas quarter.

It is remarkable that there was only one case of eruptive fever in the Britannia during the year, a case of measles. Mumps, however, were prevalent during the early part of the year.

Disease of the Brain, &c.—There were three deaths from abscess of the brain, and one from softening; six from apoplexy; two of these, however, were from drink, and one from the excessive heat in the stoke-hold; three from delirium tremens, one from paralysis, one from epilepsy, and one from exhaustion, following an attack of acute mania.

Respiratory Organs, &c.—Of 405 cases of an inflammatory character, thirty were invalided, and twenty-eight died; and of 148 cases of consumption, 118 were invalided, and fifty-one died; a considerable number of the invalids died before they were finally discharged from the service. There were 194 cases of functional and organic disease of the heart, of which seventy-three were invalided, and thirteen died.

Alimentary Organs.—There were six deaths from inflammation of the stomach and bowels, and two from diarrhœa. Only one case of disease of the liver terminated in death.

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Genito-urinary System.—Compared with the preceding year, there is a large increase in the ratio of venereal complaints, and though no death occurred under this head, eighteen men were discharged invalided as unfit for further service. Syphilis, as heretofore, appears to have prevailed with great virulence both at Plymouth and Portsmouth. In fact, considering the number of men infected at the former place, it becomes a question whether it would not be conferring a boon on the naval service to prevent the crews of all sea-going ships from landing at Plymouth, where, not only venereal, but other contagious diseases exist to an extent unheard of in any other part of the world.

The crew of the Aboukir suffered most severely from venereal affections, which were nearly all contracted at Plymouth, where the men were frequently permitted to land on leave. Between the 1st of January and the 21st of August, when she went to sea, upwards of 200 cases were put on the sick list, of which between thirty and forty required to be sent on shore to the Naval Hospital at Stonehouse. While at sea, and touching occasionally at various places along the coast of Scotland and Ireland, the disease almost entirely disappeared, so that when she returned to Plymouth, on the 8th of October, there were only four venereal cases on the sick list; but in the course of four weeks about thirty additional occurred.

In the Bulldog—a trooper, with a crew of 160 men, employed for nine months in this country, there were upwards of forty cases of a venereal character placed on the sick list, which were nearly all contracted at Portsmouth and Plymouth. Fourteen of these were sent on shore for hospital treatment. Upwards of 120 cases of syphilis and gonorrhœa occurred in the Centurion, more than three-fourths of which were contracted at Plymouth; that the disease was generally of a virulent character is evident, for no fewer than sixty-three of the patients required to be sent on shore for hospital treatment at Plymouth: about 130 occurred in the Conqueror at the same place, of which twenty-four were sent on shore to hospital.

In the Cornwallis, which lay in the Humber, there were, in a crew of about 240 men, thirty-eight cases; in the Cumberland, stationed at Sheerness, there were 150, of which it is not a little remarkable that more than one-half were of a gonorrhœal character.

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In the Donegal there were 272 cases, of which two-thirds at least were contracted at Devonport and Plymouth, and upwards of forty were sent on shore to hospital.

There were 100 cases put on the sick list of the Edgar, the majority of which appear to have been contracted at Portsmouth; for while the vessel remained at Lisbon, during the early part of the year, the attacks were comparatively rare.

In the Excellent there were 141 cases, all contracted at Portsmouth; of these, eighty-one were sent on shore to Haslar for treatment.

Thirty-seven cases of venereal were contracted by the crew of the Hawke, at Queenstown; and in the Hogue, a vessel of the same class, stationed at Greenock, in the Clyde, there were only fifteen; hence it may be inferred that the disease is not nearly so prevalent at these places as at the principal seaports in England.

In the Indus, moored during the entire year in Hamoaze, at Devonport, there were ninety-four cases of venereal, a large proportion of which were of a gonorrhœal character. Though the crew, amounting to about 950 officers and men, had free access to the shore, yet the number of cases is small compared with the number infected in sea-going ships, where the men had not the same opportunity of getting on shore.

In the Jason, for instance, which fitted out at the port between the 1st of January and the 8th of April, when she sailed for the West Indies there were sixty cases in a crew of about 270 men. Of course, they also had free access to the shore; but, according to the numbers in the respective ships, and the period of exposure, the cases were at least four or five times more numerous in the Jason than in the Indus.

In about nine months, between the 1st of April and the end of the year, 260 cases of venereal disease came under treatment in the Revenge, of which thirty-nine required to be sent to hospital. A large proportion of these cases was contracted at Devonport; about 100 cases were put on the sick-list during the Spring quarter. In the Midsummer quarter the surgeon mentions that the ship visited Orkney, Shetland, Lough Swilley, Holyhead, Greenock, Belfast, Lough Foyle, and Bearhaven, and leave was granted to well-conducted men at all these places. It is therefore obvious, that in this

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manner infectious or contagious diseases contracted at places like Plymouth or Portsmouth, may be carried and communicated to communities in various distant parts of the country, for it is well-known that venereal complaints are not confined to any particular class of men on board ship.

Two men died of rheumatism complicated with other diseases, and one from disease of the hip-joint and diarrhœa. Two died of erysipelas, and one of psoas abscess. There are also seven deaths from dropsy; one followed an attack of scarlatina, and one man died while on shore on leave from dyspepsia and debility.

For six months, from June to the end of December, there were only three cases of ulcer in the Aboukir, in a crew of about 800 men; this unusual exemption from these affections, but more especially from ulcer, the surgeon ascribed to the system of dry-holystoning the decks which had been in practice from the time she was put in commission in 1859.

Wounds, Accidents, &c.—Sixteen men were killed by falls and other accidents on board, five by falls when on shore on leave, and four were crushed to death by guns which broke adrift in bad weather. Sixteen were drowned by falling overboard, six by the upsetting of boats, six when attempting to save the lives of shipwrecked merchant seamen, one when bathing while on shore on leave, and two in attempting to desert. Six men committed suicide, three by throwing themselves overboard, one by poison, one by shooting himself, one by cutting his throat, and one man was stabbed in a quarrel when on shore. The total deaths from wounds and injuries and drowning amounted to sixty-three; of these, six were marines, and fifty-seven were blue-jackets.

Invalided.—Two men were invalided for the sequela of fever, seventy-eight for disease of the brain and nerves, forty-four of whom were affected with epilepsy, fourteen with paralysis, and ten for mental derangement; 118 were invalided for phthisis, thirty for bronchitis and inflammatory affections of the lungs, and eight for asthma. Eighty-nine were invalided for disease of the heart and blood-vessels, ten for disease of the alimentary organs, nine for hepatitis, and fifty for disease of the genito-urinary system; of these, eighteen were of a venereal character, fifty-five for rheumatism, one for gout, and twenty-five for disease of the bones and

and joints, thirty-two for affection of the eyes and ears, twenty-eight for ulcer, and thirty-two for other diseases of the skin and cellular tissue, thirty-nine for dyspepsia and debility, two for dropsy, one for cancer, fifty-six for disability consequent on wounds and injuries, and fifty for hernia, making the total number invalided 715, or in the ratio of 31·2 per 1,000 of mean force.

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TABLE, No. 1.

SHOWING the Number of CASES of all DISEASES and INJURIES, and the Number INVALIDED and DEAD, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever	325	14·2	2	·1	24	1·
Intermittent Fever	96	4·2	—	—	—	—
Small Pox	35	1·5	- -	- -	1	—
Measles	5	·2	—	—	—	—
Scarlatina	115	5·	—	—	—	—
Disease of the Brain	2	·1	- -	- -	4	·2
Apoplexy	5	·2	1	- -	6	·3
Epilepsy	92	4·	44	·2	1	—
Paralysis	24	1·	14	·7	1	—
Insanity	20	·9	10	·4	1	—
Delirium Tremens	63	2·8	- -	- -	3	·1
Headache, &c.	127	5·5	9	·4	—	—
Inflammation of the Lungs and Pleura	405	17·7	30	1·3	28	1·2
Phthisis and Hæmoptysis	148	6·5	118	5·3	51	2·2
Influenza and Catarrh	3,244	141·7	—	—	—	—
Cynanche	863	37·7	—	—	—	—
Asthma	13	·6	8	·3	—	—
Functional and Organic Disease of the Heart	194	8·5	78	3·4	13	·6
Hæmorrhoids	37	1·6	—	—	—	—
Varix	27	1·2	11	·5	—	—
Inflammation of the Stomach and Bowels	33	1·4	2	·1	6	·3
Dysentery	12	·5	5	·2	—	—
Diarrhœa	768	33·5	3	·1	2	·1
Cholera	1	—	—	—	—	—
Constipation and Colic	217	9·5	—	—	—	—
Inflammation of the Liver	33	1·4	9	·4	1	—
Jaundice	60	2·6	—	—	—	—
Splenitis	1	—	—	—	—	—

TABLE, No. 1.—Showing the Number of Cases of all Diseases, &c.—*continued.*

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Inflammation of the Bladder and Kidneys	22	·1	8	·3	1	—
Syphilis	2,300	100·4	17	·7	—	—
Gonorrhœa	677	29·6	—	—	—	—
Orchitis	434	19·	1	—	—	—
Stricture	73	3·2	12	·5	—	—
Incontinence of Urine, &c.	45	2·	12	·5	—	—
Rheumatism	1,331	58·1	55	2·4	2	·1
Gout	45	2·	1	—	—	—
Disease of the Bones and Joints	75	3·3	25	1·1	1	—
Ophthalmia	236	10·3	5	·2	—	—
Amaurosis and Cataract	28	1·2	18	·8	—	—
Otitis and Deafness	41	1·8	9	·4	—	—
Erysipelas	72	3·1	3	·1	2	·1
Scrofula	43	1·9	18	·8	—	—
Bubo (*Symp.*)	378	16·5	—	—	—	—
Phlegmon and Abscess	3,633	158·6	10	·4	1	—
Ulcer	1,702	74·3	28	1·2	—	—
Psora	977	42·7	—	—	—	—
Eruptions, &c.	353	15·4	1	—	—	—
Dyspepsia, Debility, &c.	838	36·6	39	1·7	1	—
Scurvy	1	—	—	—	—	—
Dropsy	21	·9	2	·1	7	·3
Worms	10	·4	—	—	—	—
Cancer	2	·1	1	—	—	—
Purpura	1	—	—	—	—	—
Wounds and Injuries	3,989	174·2	56	2·5	25	1·1
Burns and Scalds	156	6·8	—	—	—	—
Hernia	72	3·1	50	2·1	—	—
Drowned	- -	- -	- -	- -	31	1·4
Suicide	2	·1	- -	- -	6	·3
Murdered	- -	- -	- -	- -	1	—
Poison	3	·1	—	—	—	—
TOTAL	24,525	1071·	715	31·2	220	9·6

Table, No. 2.

Showing the Number of Days' Sickness from each Disease, and from Injuries, the average Number of Men Sick Daily, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever	2,516	4,945	7,461	20·4	·9
Intermittent Fever - -	786	591	1,377	3·8	·2
Small Pox - - - -	129	1,542	1,671	4·6	·2
Measles - - - - -	89	87	176	·5	—
Scarlatina - - - -	258	1,481	1,739	4·8	·2
Disease of the Brain - -	13	266	279	·8	—
Apoplexy - - - -	2	75	77	·2	—
Epilepsy - - - -	826	769	1,595	4·3	·2
Paralysis - - - -	273	2,706	2,979	8·2	·4
Insanity - - - - -	85	359	444	1·2	·1
Delirium Tremens - - -	428	852	1,280	3·5	·2
Headache, &c. - - -	926	443	1,369	3·7	·2
Inflammation of the Lungs and Pleura - - - -	4,546	10,160	14,706	40·5	1·8
Phthisis and Hæmoptysis -	1,632	10,961	12,593	34·3	1·5
Influenza and Catarrh - -	20,117	3,773	23,890	65·5	2·9
Cynanche - - - -	5,806	871	6,677	18·3	·8
Asthma - - - - -	65	129	194	·5	—
Functional and Organic Disease of the Heart - - -	1,635	4,699	6,334	17·3	·8
Hæmorrhoids - - - -	305	69	374	1·	—
Varix - - - - - -	365	17	382	1·1	—
Inflammation of the Stomach and Bowels - - -	171	810	981	2·8	·1
Dysentery - - - -	135	1,840	1,975	5·4	·2
Diarrhœa - - - -	3,623	569	4,192	11·5	·5
Constipation and Colic - -	888	96	984	2·7	·1
Inflammation of the Liver -	218	896	1,114	3·1	·2
Jaundice - - - -	941	386	1,327	3·6	·2
Splenitis - - - - -	29	56	85	·2	—

Table, No. 2.—Showing the Number of Days' Sickness from each Disease, &c.—*cont^d*.

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Inflammation of the Bladder and Kidneys - - -	291	845	1,136	3·7	·2
Syphilis - - - - - -	35,254	48,952	84,206	230·7	10·2
Gonorrhœa - - - - -	9,854	2,440	12,294	33·6	1·5
Orchitis - - - - - -	5,404	2,282	7,686	21·	·9
Stricture - - - - -	787	1,881	2,668	7·4	·3
Incontinence of Urine, &c. -	396	368	764	2·	—
Rheumatism - - - - -	11,784	14,655	26,439	72·4	3·2
Gout - - - - - -	364	107	471	1·3	—
Disease of the Bones and Joints	836	3,179	4,015	11·	·5
Ophthalmia - - - - -	2,437	1,214	3,651	10·	·5
Amaurosis and Cataract - -	204	317	521	1·5	—
Otitis and Deafness - - -	528	342	870	2·4	—
Erysipelas - - - - -	913	774	1,687	4·6	·2
Scrofula - - - - - -	676	1,259	1,935	5·3	·2
Bubo (*Symp.*) - - -	6,310	1,499	7,809	21·4	·9
Phlegmon and Abscess - -	31,408	6,056	37,464	102·6	4·5
Ulcer - - - - - -	24,828	10,961	35,789	98·5	4·3
Psora - - - - - -	7,273	239	7,512	20·6	·9
Eruptions, &c. - - -	4,072	2,204	6,276	17·2	·8
Dyspepsia and Debility - -	5,596	3,657	9,253	25·3	1·1
Scurvy - - - - - -	18	27	45	—	—
Dropsy - - - - - -	170	1,048	1,218	3·3	·2
Worms - - - - - -	54	54	108	·3	—
Cancer - - - - - -	33	268	301	·8	—
Purpura - - - - - -	15	- -	15	—	—
Wounds and Injuries - -	39,098	9,901	48,999	134·2	5·9
Burns and Scalds - - -	1,610	232	1,842	5·1	·2
Hernia - - - - - -	598	202	800	2·2	·1
Poison - - - - - -	1	2	3	—	—
Total - - -	237,619	164,413	402,032	1101·5	48·1

TABLE, No. 3 - - - - - - -

SHOWING the Number INVALIDED from - - - - - - -

CAUSE of INVALIDING.	Aboukir.	Ajax.	Asia.	Blenheim.	Britannia.	Bulldog.	Cambridge.	Centurion.	Colossus.	Conqueror.	Cornwallis.	Cossack.	Cumberland.	Dasher.	Dauntless.	Dee.	Diadem.	Donegal.	Eagle.	Edgar.	Edinburgh.	Excellent.	Ferret.	Fisgard.	Flying Fish.
Continued and Remittent Fever - -	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-
Insanity - - - -	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	1	-	-	3	-	-	-	-	-
Epilepsy - - -	-	-	-	-	-	1	-	1	-	1	-	-	2	-	-	-	-	5	-	-	-	1	1	7	-
Paralysis - - -	-	-	3	-	-	-	-	-	1	-	-	-	-	-	1	-	-	1	-	1	-	-	-	-	-
Apoplexy - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neuralgia, &c. - -	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	2	-
Inflammation of the Lungs and Pleura -	1	-	4	-	-	-	-	2	-	1	-	1	2	-	-	-	-	1	-	1	-	1	-	1	-
Phthisis and Hæmoptysis	3	4	2	1	1	-	6	5	1	9	1	1	2	-	2	-	4	13	-	5	-	3	1	2	1
Asthma - - - -	-	-	1	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Functional and Organic Disease of the Heart -	1	1	2	-	-	-	3	1	1	2	-	1	2	-	1	1	1	2	-	4	-	3	-	6	-
Varix - - - -	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	3	-	1	-
Inflammation of the Stomach and Bowels -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dysentery - - -	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Diarrhœa - - -	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Inflammation of the Liver	-	-	-	-	-	-	1	1	1	-	-	-	4	-	-	-	-	1	-	-	-	-	-	-	-
Inflammation of the Kidneys and Bladder	-	-	1	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Syphilis - - - -	1	-	-	-	-	2	-	-	-	2	1	-	-	-	-	-	-	3	-	-	-	1	-	1	-
Orchitis - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stricture - - -	-	-	2	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Incontinence of Urine, &c. - - - -	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	1	-	-	1	1	1
Inflammation of the Eyes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-
Amaurosis and Cataract -	-	-	3	-	-	-	-	-	-	2	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-
Otitis and Deafness -	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	1	-	-	-	1	-
Rheumatism - - -	2	1	8	-	2	-	1	-	1	-	-	3	2	-	1	-	2	2	-	2	-	1	-	2	2
Gout - - - -	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Disease of the Bones and Joints - -	3	1	1	-	-	-	-	-	-	1	-	-	1	-	-	-	1	-	-	-	1	1	-	1	-
Erysipelas - - -	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Scrofula - - - -	1	-	1	-	-	-	-	-	-	2	-	-	1	-	-	-	-	1	-	3	-	2	-	-	-
Phlegmon and Abscess -	1	-	1	-	-	-	1	-	1	-	-	-	1	-	-	-	-	-	-	1	1	-	-	1	-
Ulcer - - - -	-	-	1	-	-	-	1	-	-	2	-	5	-	-	1	-	1	1	-	-	-	-	-	1	1
Eruptions - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dyspepsia and Debility -	-	-	6	-	-	-	-	1	-	3	1	-	1	-	-	-	2	-	-	2	-	2	2	2	-
Dropsy - - - -	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-
Cancer - - - -	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wounds and Injuries -	-	1	1	-	1	-	1	2	-	1	-	1	4	-	1	-	-	1	1	6	-	1	-	5	-
Hernia - - - -	2	-	3	-	-	-	1	3	1	5	1	-	-	-	-	-	-	1	-	2	-	4	1	5	-
TOTAL - - -	16	9	42	3	5	3	17	17	8	32	4	15	32	1	8	1	12	34	2	34	2	25	6	42	5

- - - - - - - Table, No. 3.

- - - - - - each Ship employed on the Home Station.

Formidable.	Geyser.	Hastings.	Hawke.	Hero.	Hogue.	Icarus.	Illustrious.	Immortalité.	Implacable.	Impregnable.	Indus.	Jackal.	Jason.	Majestic.	Pembroke.	Porcupine.	Revenge.	Rhadamanthus.	Royal Adelaide.	Russell.	St. Vincent.	Sanspareil.	Sealark.	Southampton.	Trafalgar.	Victoria and Albert.	Victory.	Warrior.	Wellesley.	Wellington.	Total.
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	–	–	1	–	–	–	–	–	10
2	–	–	–	1	1	–	–	3	–	4	2	–	–	–	–	–	1	1	1	–	–	–	2	–	6	–	1	–	–	–	44
–	–	–	–	–	–	–	–	–	–	–	2	1	–	–	–	–	1	1	–	–	–	–	–	1	–	–	–	1	–	–	14
–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	9
–	–	–	–	–	–	–	2	7	–	–	2	–	–	–	–	–	1	–	1	–	–	–	–	–	2	–	–	–	–	–	30
1	1	–	5	1	–	–	–	4	–	7	3	–	–	–	–	–	2	–	5	4	6	4	1	1	3	1	1	–	1	–	118
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	2	2	–	–	–	–	–	8
4	1	–	2	–	–	–	–	1	–	6	2	–	–	–	1	1	5	–	3	–	1	2	–	3	8	–	2	1	3	–	78
–	–	–	–	1	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1	–	–	–	1	–	11
–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
–	–	–	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	5
–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	9
–	–	–	1	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	8
–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	1	–	–	–	3	–	–	–	–	–	17
1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	1	–	1	–	–	–	–	–	–	1	1	–	–	–	–	1	–	–	–	1	–	1	–	1	–	–	–	12
3	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	12
–	–	–	–	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	5
1	–	–	–	–	1	–	1	–	–	–	3	–	–	–	–	–	–	1	–	–	2	–	–	–	1	–	–	–	1	–	18
–	–	–	–	1	1	–	–	1	–	–	1	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	9
2	1	1	1	1	1	–	–	2	–	2	–	–	1	–	–	–	1	–	1	–	2	–	–	–	4	–	1	1	1	–	55
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	2	–	–	–	–	–	2	–	–	–	1	–	–	–	–	1	–	4	–	–	–	2	–	1	–	–	1	25
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	3
2	–	–	–	–	–	–	–	–	–	3	–	–	–	–	–	–	–	–	–	–	1	–	–	1	–	–	–	–	–	–	18
1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	10
1	–	–	–	1	–	1	–	–	1	2	–	–	–	–	2	–	–	–	1	–	–	–	–	–	3	–	2	–	–	–	28
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1
4	–	–	–	3	–	–	–	–	–	1	2	–	1	–	–	–	1	–	–	–	1	–	–	2	–	–	1	–	–	1	39
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
3	1	–	–	2	–	–	1	–	3	4	–	–	–	1	–	–	4	1	–	–	4	–	–	1	3	–	–	–	1	–	56
1	1	–	–	3	–	–	1	1	1	–	1	–	–	–	–	–	1	–	–	–	4	1	–	–	1	–	4	1	–	–	50
27	6	1	9	21	4	2	6	22	5	32	20	1	4	4	4	2	20	5	16	4	28	7	4	11	45	1	15	4	8	2	715

Table, No. 4. - - - - - - - -

Showing the Number of Deaths - - - - - - -

CAUSE of DEATH.	Aboukir.	Ajax.	Asia.	Blenheim.	Britannia.	Bulldog.	Cambridge.	Centurion.	Colossus.	Conqueror.	Cornwallis.	Cumberland.	Dasher.	Dauntless.	Diadem.	Donegal.	Edgar.	Excellent.	Ferret.	Fisgard.	Flying Fish.	Formidable.
Continued and Remittent Fever - - -	1	-	3	-	3	-	-	1	-	-	-	3	1	-	-	1	-	1	1	-	-	-
Small-pox - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inflammation of the Brain	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paralysis - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Delirium Tremens -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-
Apoplexy - - -	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Epilepsy - - -	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Insanity - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Inflammation of the Lungs and Pleura - -	1	1	3	-	1	-	-	1	2	2	-	1	1	-	-	2	-	-	-	2	1	1
Phthisis and Hæmoptysis	1	1	4	1	1	-	2	2	-	2	-	1	1	-	3	4	3	-	-	-	-	2
Laryngitis - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Functional and Organic Disease of the Heart -	-	-	2	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	2
Inflammation of the Stomach and Bowels -	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Diarrhœa - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Inflammation of the Liver	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inflammation of the Kidneys and Bladder -	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rheumatism - - -	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Disease of the Bones and Joints - - - -	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Erysipelas - - -	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phlegmon and Abscess -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dyspepsia and Debility -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Dropsy - - - -	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Wounds and Injuries -	1	1	-	-	-	-	-	-	1	3	-	-	-	-	-	2	1	-	-	-	-	-
Drowned - - -	-	8	-	-	-	1	-	-	-	1	3	2	-	-	1	2	1	-	-	-	-	1
Suicide - - - -	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Murdered - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Total - - -	6	14	14	2	7	2	2	5	3	10	3	7	3	1	5	12	7	1	1	5	1	7

- - - - - - - TABLE, No. 4.

- - - - - in each Ship employed on the HOME Station.

Hawke.	Hero.	Hogue.	Illustrious.	Immortalité.	Implacable.	Impregnable.	Indus.	Jackal.	Jason.	Majestic.	Pembroke.	Porcupine.	Revenge.	Royal Adelaide.	Russell.	St. Vincent.	Sanspareil.	Southampton.	Trafalgar.	Victoria and Albert.	Victory.	Warrior.	Wellesley.	Wellington.	TOTAL.
-	-	-	-	1	1	1	1	-	-	1	-	-	-	-	-	-	-	-	1	-	1	2	-	-	24
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
-	-	-	-	1	-	1	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	4
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
-	2	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	6
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
2	1	-	-	-	-	-	1	-	-	-	-	-	1	1	-	1	-	-	1	-	-	-	-	-	27
-	-	-	-	1	-	3	1	-	1	1	2	-	2	2	-	1	-	-	3	-	6	-	-	-	51
-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	3	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2	-	-	-	-	-	1	13
-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	6
-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	-	-	1	1	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	7
1	2	-	-	-	1	1	2	-	-	-	-	-	2	1	1	-	-	-	5	-	-	-	-	-	25
-	-	1	-	-	1	-	2	-	-	-	-	-	1	-	-	-	3	-	2	-	-	-	-	1	31
1	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	6
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
4	5	2	3	4	3	7	12	1	2	3	4	1	7	5	3	2	3	2	12	1	10	2	1	3	220

TABLE, No. 5.

SHOWING the Names of the SHIPS; the Average Complement and Mean Force of each SHIP; the Total Number of Cases; the Total Number of Days' Sickness on Board, and the Average Number of Men Sick Daily.

P. O. Paid off. C. S. Station changed. W. Wrecked. C. Commissioned.

NAME OF SHIP.		Number of Guns, Horse Power, &c.	Period.	Average Complement.	Mean Force of each Ship.	Number of Cases.	Number of Days' Sickness on Board.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force of each Sp.	Number Discharged to Hospital.
Aboukir		86 Sc. 400	year	825	825	955	10,893	29·8	36·1	87
Ajax		60 Sc. 450	year	450	450	332	3,488	9·6	21·3	43
Asia		- - -	year	1,500	1,500	809	6,610	18·1	12·1	224
Atholl	P.O.	- - -	6 mo.	20	10	2	15	–	–	–
Blenheim		60 Sc. 450	year	260	260	411	5,611	15·4	59·2	8
Britannia		8	year	520	520	485	3,470	9·5	18·3	96
Bulldog	C. S.	6 P. W. 500	9 mo.	160	120	216	2,503	6·9	57·5	20
Cambridge		78	year	560	560	513	4,406	12·1	21·6	50
Castor		22	year	60	60	39	459	1·3	21·7	–
Centurion	P. O.	68 Sc. 400	11 mo.	705	645	708	7,072	19·4	30·1	136
Colossus		80 Sc. 400	year	255	255	237	2,572	7·	27·5	27
Conqueror	W.	100 Sc. 800	year	930	930	871	9,589	26·3	28·3	76
Cornwallis		60 Sc. 200	year	240	240	646	9,516	26·1	108·8	32
Cossack		20 Sc. 250	6 mo.	270	135	182	2,811	7·7	57·	52
Crocodile	P. O.	- - -	7 mo.	35	20	13	98	·3	15·	6
Cumberland		24	year	1,000	1,000	821	8,876	24·3	24·3	78
Dasher		2 P. W. 100	year	120	120	74	1,175	3·2	26·7	6
Dauntless		31 Sc. 580	year	165	165	157	2,011	5·5	33·3	16
Dee		1 P. W. 220	year	65	65	104	878	2·4	36·9	14
Diadem		30 Sc. 800	year	490	490	438	5,727	15·7	32·	23
Donegal		81 Sc. 800	year	900	900	1,206	9,740	26·7	29·7	141
Eagle		16	year	275	275	210	2,780	7·6	27·6	12
Edgar		71 Sc. 600	year	835	835	927	10,627	29·1	34·9	117
Edinburgh		60 Sc. 450	year	230	230	247	2,592	7·1	30·9	15
Excellent		- - -	year	900	900	653	4,375	12·	13·3	176
Ferret		8	year	100	100	270	2,137	5·8	58·	33
Fisgard		42	year	535	535	653	4,181	11·5	21·5	122
Flying Fish		6 Sc. 350	year	100	100	126	1,247	3·4	34·	22
Formidable		26	year	500	500	713	6,369	17·4	34·8	36
Geyser		6 P. W. 280	year	160	160	217	2,776	7·6	47·5	22
Hastings	C.	50 Sc. 200	8 mo.	50	35	55	440	1·2	34·3	–
Hawke		60 Sc. 200	year	355	355	420	3,937	10·8	30·4	36
Hero		79 Sc. 600	year	845	845	987	13,148	36·	42·6	112
Hogue		60 Sc. 450	year	360	360	88	1,705	4·7	13·1	12
Icarus		11 Sc. 150	year	130	130	275	2,574	7·1	54·6	30
Illustrious	P. O.	72	6 mo.	400	200	54	461	1·3	6·5	12
Immortalité	C. S.	35 Sc. 600	9 mo.	425	210	665	7,975	21·8	103·8	34
Implacable		24	year	420	420	571	4,932	13·5	32·1	116
Impregnable		78	year	615	615	340	2,600	7·1	11·5	124
Indus		- - -	year	950	950	615	7,834	21·5	22·6	68
Jackal		4 P. W. 150	year	60	60	31	670	1·8	30·	3
Jason	C. S.	21 Sc. 400	6 mo.	270	135	408	3,181	8·7	64·4	41
Lizard		3 P. W. 150	year	45	45	29	504	1·3	28·9	5
Majestic		80 Sc. 400	year	275	275	653	4,685	12·8	46·5	6
Nautilus		6	year	80	80	163	1,036	2·8	35·	9
Pembroke		60 Sc. 200	year	270	270	337	3,563	9·8	36·3	27
Porcupine		3 P. W. 132	year	40	40	28	236	·6	15·	2
Revenge	C.	73 Sc. 800	11 mo.	850	780	1,107	10,500	28·8	36·9	105
Rhadamanthus		P. W. 220	year	70	70	83	856	2·3	32·9	7
Rolla		6	year	90	90	151	1,461	4·	44·4	20
Royal Adelaide		26	year	600	600	834	5,716	15·7	26·2	111
Russell		60 Sc. 200	year	290	290	155	1,924	5·3	18·3	13
St. Vincent		26	year	240	240	160	2,248	6·2	25·8	41
St. Vincent (supernumeraries)		- - -	year	425	425	349	4,969	13·6	32·	110
Sanspareil	P. O.	70 Sc. 400	6 mo.	565	280	261	3,356	9·2	32·9	19
Saturn		- - -	year	70	70	21	316	·9	12·9	–
Sealark		8	year	100	100	129	692	1·9	19·	21
Southampton	P. O.	50	6 mo.	185	90	64	449	1·2	13·3	6
Trafalgar		70 Sc. 500	year	800	800	956	13,036	35·7	44·6	81
Victoria and Albert		2 P. W. 600	year	180	180	128	1,523	4·1	22·8	14
Victory		12	year	195	195	457	4,392	12·	61·5	94
Warrior	C.	40 Sc. 1,250	5 mo.	545	225	504	5,910	16·2	72·	92
Wellesley		72	year	370	370	155	1,093	3·	8·1	24
Wellington	P. O.	72	6 mo.	335	165	52	547	1·5	9·	4

TABLE, No. 6.

SHOWING the Number of CASES of all DISEASES and INJURIES in each Ship employed on the HOME Station.

DISEASE OR INJURY.	Aboukir.	Ajax.	Asia.	Atholl.	Blenheim.	Britannia.	Bulldog.	Cambridge.	Castor.	Centurion.	Colossus.	Conqueror.	Cornwallis.	Cossack.	Crocodile.	Cumberland.	Dasher.	Dauntless.	Dee.	Diadem.	Donegal.
Continued and Remittent Fever	15	2	9	–	1	38	6	2	1	1	9	13	12	4	1	13	10	3	–	6	5
Intermittent Fever	2	–	–	–	3	–	–	5	–	5	–	4	3	–	–	9	–	–	–	–	3
Small-pox	–	–	–	–	–	–	–	4	–	–	–	2	3	–	–	–	–	–	–	–	4
Scarlatina	–	9	–	–	2	1	–	–	–	–	–	–	–	–	–	8	–	–	–	–	–
Measles	–	2	–	–	–	1	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–
Inflammation of the Brain	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Apoplexy	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–
Epilepsy	3	1	–	–	–	1	1	–	–	5	–	3	1	–	–	6	–	–	2	1	6
Insanity	–	–	2	–	–	1	–	–	–	–	–	2	–	–	–	4	–	–	–	1	2
Delirium Tremens	7	–	7	–	–	–	–	–	–	1	1	–	1	–	–	5	–	2	–	1	2
Paralysis	–	–	3	–	–	–	–	1	–	1	1	–	–	–	–	2	–	1	–	–	1
Headache, &c.	3	3	3	–	–	3	2	4	1	2	1	–	4	1	–	2	–	1	–	8	11
Inflammation of the Lungs and Pleura	9	7	22	–	–	4	4	5	2	6	8	26	6	3	4	18	2	1	1	3	25
Phthisis and Hæmoptysis	5	2	5	–	4	3	–	16	–	1	1	7	1	–	–	4	1	1	–	7	9
Catarrh	173	84	102	1	55	80	10	75	4	52	21	111	72	12	1	105	7	4	19	27	144
Cynanche	12	10	30	–	10	68	1	6	3	16	16	6	15	5	–	35	–	9	2	31	20
Asthma	1	–	3	–	1	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–
Functional and Organic Disease of the Heart	1	2	13	–	1	–	–	4	–	5	5	5	2	3	–	6	–	–	–	–	7
Hæmorrhoids	3	–	2	–	1	–	–	1	–	–	2	–	1	–	–	–	–	–	–	–	2
Varix	–	–	–	–	–	–	–	–	–	–	–	2	–	2	–	–	–	–	–	1	–
Inflammation of the Stomach and Bowels	a 1	–	1	–	–	1	a 2	3	–	–	8	–	–	–	–	a 2	–	1	–	–	3
Dysentery	–	–	1	–	–	–	1	–	–	–	–	–	–	–	–	1	1	–	–	–	–
Diarrhœa	27	5	46	–	32	16	4	15	3	8	2	10	20	–	–	33	4	2	7	27	38
Cholera	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Constipation and Colic	4	1	6	–	5	2	1	9	–	1	1	7	6	–	–	20	1	1	5	5	5
Inflammation of the Liver	1	1	5	–	–	–	–	2	–	1	–	–	–	1	–	3	–	–	–	–	–
Jaundice	1	–	2	–	–	8	1	1	–	5	–	2	2	–	–	2	–	1	–	1	1
Splenitis	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–
Inflammation of the Kidneys and Bladder	–	1	–	–	3	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	1
Syphilis	145	9	113	–	29	19	35	36	1	100	9	106	75	31	–	58	5	8	7	38	204
Gonorrhœa	41	6	65	–	13	3	4	3	1	7	9	4	20	6	–	81	1	3	–	4	35
Orchitis	32	7	10	–	4	6	4	7	–	22	2	22	11	7	–	11	4	2	3	5	33
Stricture	1	1	5	1	1	–	1	–	–	7	–	7	4	1	–	2	–	1	–	2	4
Incontinence of Urine, &c.	1	1	2	–	–	1	–	2	–	–	2	–	–	–	–	7	–	–	–	4	–
Rheumatism	43	20	55	–	41	31	17	43	4	21	15	47	29	18	–	47	8	18	9	12	59
Gout	–	2	8	–	–	1	–	2	3	–	–	–	1	2	–	2	–	–	–	–	–
Disease of the Bones and Joints	1	1	2	–	2	–	–	1	–	1	2	1	–	–	–	4	1	–	1	1	7
Inflammation of the Eyes	12	2	5	–	3	2	3	7	–	5	3	18	8	1	–	6	2	2	–	5	7
Amaurosis and Cataract	–	–	4	–	–	–	–	1	–	–	–	2	–	–	–	–	–	1	–	1	2
Otitis and Deafness	–	–	–	–	2	1	–	–	–	1	2	–	–	–	–	2	–	1	–	–	2
Erysipelas	8	1	2	–	–	2	–	6	–	1	–	4	–	–	–	2	–	–	–	1	4
Scrofula	3	2	–	–	1	–	–	–	–	–	–	1	–	–	–	6	–	–	1	3	–
Bubo (*Symp.*)	17	1	17	–	1	3	4	4	–	14	1	13	13	–	–	6	–	1	–	2	44
Phlegmon and Abscess	154	41	44	–	62	41	35	55	5	144	38	124	115	31	2	76	5	34	6	83	163
Ulcer	24	10	49	–	27	20	4	26	1	76	10	31	31	22	1	44	3	14	–	10	89
Psora	20	2	55	–	5	11	–	49	–	21	–	131	24	2	–	11	2	3	2	7	28
Eruptions	5	1	1	–	1	12	–	2	–	9	7	27	4	8	–	10	1	12	1	9	40
Dyspepsia and Debility	33	7	18	–	23	35	17	23	1	33	13	24	21	2	–	36	2	11	5	28	30
Dropsy	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	2	–	–	1	–	2
Worms	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	–	–	–	1	–
Purpura	–	–	–	–	–	–	–	–	7	–	–	–	–	–	–	–	–	–	–	1	–
Cancer	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Scurvy	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Wounds and Injuries	133	84	84	–	77	69	57	89	–	128	41	96	134	20	4	123	31	19	30	95	151
Burns and Scalds	10	4	3	–	–	1	2	3	1	3	3	9	4	–	–	1	1	–	2	7	13
Hernia	4	–	4	–	1	–	–	1	–	4	2	3	2	–	–	2	–	–	–	–	–
Suicide	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Poison	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL	955	332	809	2	411	485	216	513	39	708	237	871	646	182	13	821	74	157	104	438	1,206

continued on p. 20.

a Hæmatemesis.

TABLE, No. 6.—Showing the Number of Cases of all Diseases and Injuries - - -

continued from p. 19.

DISEASE OR INJURY,	Eagle.	Edgar.	Edinburgh.	Excellent.	Ferret.	Fisgard.	Flying Fish.	Formidable.	Geyser.	Hastings.	Hawke.	Hero.	Hogue.	Icarus.	Illustrious.	Immortalité.	Implacable.	Impregnable.	Indus.	Jackal.
Continued and Remittent Fever - - - -	13	3	3	6	4	2	-	-	1	-	20	4	4	19	-	19	7	3	6	-
Intermittent Fever -	1	1	-	6	-	2	-	3	-	2	1	-	1	-	-	2	1	2	3	-
Small-pox - - -	-	-	-	3	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-
Scarlatina - - -	-	5	-	-	-	2	-	-	-	-	-	-	1	-	-	-	80	-	-	-
Measles - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Inflammation of the Brain - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Apoplexy - - -	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-	-	-
Epilepsy - - -	3	3	-	1	2	8	1	4	-	-	-	-	1	2	-	5	2	4	3	-
Insanity - - -	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-
Delirium Tremens -	-	3	1	-	-	-	-	-	3	-	-	2	1	-	-	4	1	2	1	-
Paralysis - - -	-	-	2	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	4	-
Headache, &c. - -	1	5	2	6	2	5	-	3	1	-	3	1	-	5	-	6	-	-	2	-
Inflammation of the Lungs and Pleura -	-	34	1	10	10	8	3	10	2	1	13	25	-	3	3	11	5	6	10	3
Phthisis and Hæmoptysis	-	5	-	6	2	2	1	-	-	2	5	3	2	-	4	-	-	5	3	1
Catarrh - - - -	12	89	48	64	77	83	17	54	45	8	40	109	4	43	5	121	23	50	112	3
Cynanche - - -	-	28	13	11	15	37	-	33	3	-	21	23	9	13	-	30	40	9	13	-
Asthma - - - -	-	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Functional and Organic Disease of the Heart -	2	7	2	5	2	9	1	15	-	-	2	5	1	2	3	5	1	14	4	-
Hæmorrhoids - -	-	1	1	-	-	1	1	-	-	-	1	2	-	3	-	-	-	1	2	-
Varix - - - -	1	-	2	2	-	1	1	-	-	-	-	6	1	-	-	-	-	-	-	-
Inflammation of the Stomach and Bowels -	-	-	-	3	-	1	-	1	-	-	-	-	-	-	-	1	-	-	2	1
Dysentery - - -	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	1	-	-	1	2
Diarrhœa - - -	3	4	10	13	6	27	7	20	7	2	27	13	1	4	1	7	19	17	36	2
Cholera - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Constipation and Colic -	4	4	2	6	-	1	5	13	5	3	4	2	-	9	1	2	1	2	7	1
Inflammation of the Liver	-	-	1	3	2	-	-	1	-	2	1	-	-	-	-	-	2	-	-	-
Jaundice - - -	-	2	-	1	-	2	-	2	-	-	-	-	-	-	-	2	-	3	2	-
Splenitis - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inflammation of the Kidneys and Bladder -	-	-	-	1	-	-	-	2	-	1	2	2	-	-	1	-	-	-	1	-
Syphilis - - - -	6	72	6	115	1	65	17	28	26	2	26	110	10	22	4	54	1	21	54	1
Gonorrhœa - - -	-	11	3	11	3	11	6	20	2	1	7	26	5	4	-	6	6	9	31	-
Orchitis - - - -	1	17	4	15	-	10	2	11	7	1	4	25	-	6	1	17	2	6	9	1
Stricture - - -	-	7	-	2	-	-	1	3	2	-	-	3	-	1	-	-	-	4	1	-
Incontinence of Urine, &c.	1	-	1	1	-	-	2	2	1	-	-	5	-	-	-	1	1	-	-	-
Rheumatism - - -	5	29	15	49	3	43	14	40	7	4	15	42	7	11	5	53	14	33	38	3
Gout - - - -	-	1	2	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	4	-
Disease of the Bones and Joints - - -	3	1	-	2	-	1	-	-	2	-	1	8	-	2	-	1	1	-	1	-
Inflammation of the Eyes	2	7	2	3	1	8	-	7	2	-	7	11	2	3	-	9	5	4	6	-
Amaurosis and Cataract	1	-	-	-	-	-	-	1	1	-	-	-	2	-	-	-	-	1	3	-
Otitis and Deafness -	1	-	1	2	2	-	-	-	-	1	1	4	-	3	-	1	1	-	3	2
Erysipelas - - -	1	4	2	-	-	-	-	3	-	2	3	1	-	-	1	1	6	-	-	-
Scrofula - - - -	-	3	-	5	-	1	-	3	-	-	1	3	-	-	-	-	-	-	-	-
Bubo (*Symp.*) - -	-	41	4	9	-	6	1	4	5	4	6	16	-	11	-	5	1	8	12	-
Phlegmon and Abscess -	39	143	45	94	83	139	12	136	27	1	76	192	11	33	7	106	109	36	47	5
Ulcer - - - -	42	75	16	41	14	48	4	97	8	2	30	49	1	15	1	33	88	34	22	-
Psora - - - -	1	157	1	20	4	-	1	21	2	-	7	15	-	1	-	36	26	25	5	-
Eruptions, &c. - -	16	18	4	5	1	6	1	3	-	-	4	41	1	3	-	6	2	1	10	-
Dyspepsia and Debility -	8	17	5	12	4	13	8	19	1	1	17	42	2	24	6	4	-	11	44	-
Dropsy - - - -	1	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	1	-	2	-
Worms - - - -	-	-	-	-	1	-	-	2	-	-	-	1	-	-	-	-	-	-	1	-
Purpura - - - -	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cancer - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scurvy - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wounds and Injuries -	40	123	48	107	27	102	18	142	56	15	72	180	17	31	8	108	119	26	103	6
Burns and Scalds - -	2	3	-	5	-	-	2	4	1	-	1	4	3	1	1	4	5	2	3	-
Hernia - - - -	-	2	1	-	2	6	-	1	-	-	-	4	-	-	1	3	1	-	4	-
Suicide - - - -	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Poison - - - -	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL - - -	210	927	247	653	270	653	126	713	217	55	420	987	88	275	54	665	571	340	615	31

- - - - - - in each Ship employed on the Home Station—*continued.*

Jason.	Lizard.	Majestic.	Nautilus.	Pembroke.	Porcupine.	Revenge.	Rhadamanthus.	Rolla.	Royal Adelaide.	Russell.	St. Vincent.	St. Vincent, Supernumeraries.	Sanspareil.	Saturn.	Sealark.	Southampton.	Trafalgar.	Victoria and Albert.	Victory.	Warrior.	Wellesley.	Wellington.	TOTAL.
3	-	-	3	-	-	1	-	1	21	4	1	-	-	2	3	-	14	-	4	-	1	2	325
2	2	2	-	8	-	12	1	-	1	2	-	-	1	-	-	-	4	-	2	-	-	-	96
1	-	-	-	-	-	1	-	-	3	-	-	-	-	-	-	-	-	-	8	-	-	-	35
-	-	-	-	1	-	-	-	1	-	-	-	-	3	-	-	-	-	-	2	-	-	-	115
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	5
1	-	2	-	-	-	5	2	-	2	-	-	-	-	-	4	-	6	-	-	-	1	-	92
-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	20
1	-	-	-	3	1	-	-	-	1	-	2	5	-	-	-	1	3	-	1	-	-	-	63
-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	1	1	-	2	24
-	-	-	-	4	3	-	2	-	7	2	3	2	-	-	-	3	2	3	1	4	-	-	127
1	2	8	1	3	-	13	-	-	13	3	2	2	9	-	-	2	14	1	8	5	4	-	405
2	-	1	1	-	-	7	1	-	7	-	1	-	5	-	-	1	3	-	7	1	1	2	148
60	4	209	15	58	8	188	11	4	103	37	26	47	25	-	13	7	102	12	55	65	20	9	3,244
2	-	14	1	7	-	8	2	2	116	13	2	2	24	5	10	1	18	12	-	29	2	-	863
-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	1	1	-	-	-	-	-	13
5	-	-	1	2	-	6	-	-	4	-	-	4	1	-	2	4	18	-	3	6	3	1	194
-	-	1	-	2	-	2	-	-	1	-	-	-	-	-	-	-	3	2	-	-	1	-	37
-	-	-	-	-	-	-	1	-	-	-	1	1	-	-	1	-	2	-	-	-	1	1	27
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	33
-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	12
53	-	49	4	6	1	13	5	2	26	23	4	3	7	2	1	2	12	5	3	8	12	1	768
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
3	1	5	4	3	1	2	1	-	5	9	2	1	6	1	-	2	5	7	-	6	-	1	217
1	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	3	1	-	33
2	-	-	-	1	1	2	-	-	1	2	-	-	1	-	-	-	3	-	4	1	1	-	60
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	-	-	1	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	22
39	-	13	-	11	1	208	7	-	63	-	-	49	26	-	10	1	99	3	25	67	6	2	2,300
15	-	12	1	8	-	41	-	-	33	3	9	35	3	-	7	-	10	1	7	22	1	1	677
5	-	4	-	5	-	9	2	1	13	4	7	13	2	1	-	-	20	-	6	10	1	-	434
-	-	2	-	-	2	1	-	-	2	-	-	-	-	-	-	1	-	3	-	-	-	-	73
-	-	-	-	1	-	1	-	-	2	-	-	-	-	-	-	-	3	-	-	2	-	-	45
17	4	28	1	21	2	54	2	4	30	5	16	23	7	-	6	1	62	12	27	28	13	1	1,331
-	-	3	-	1	-	-	-	-	-	-	1	-	1	-	1	1	1	2	-	-	-	2	45
3	1	2	2	-	-	1	-	1	-	-	1	3	2	-	1	-	-	-	2	4	1	3	75
1	1	4	-	5	-	8	-	2	8	4	2	3	3	1	-	1	10	-	9	3	1	-	236
-	-	-	-	-	-	-	1	-	-	-	-	2	-	-	-	2	1	-	-	-	1	1	28
-	-	-	-	1	-	1	-	-	1	-	-	-	-	-	-	-	-	-	1	4	-	-	41
-	-	1	-	-	-	1	-	-	2	-	1	-	1	-	-	-	7	-	2	-	1	1	72
-	-	-	-	1	-	7	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	43
-	-	10	4	3	-	22	4	-	9	5	9	12	1	-	-	2	-	1	11	8	2	1	378
42	2	84	72	38	3	130	8	61	89	7	23	35	54	3	30	8	169	14	92	40	25	5	3,633
20	2	49	9	31	1	76	7	26	39	8	7	32	20	1	18	4	153	2	39	34	9	3	1,702
33	-	6	3	16	-	77	-	5	36	6	-	-	1	-	-	-	29	-	59	9	1	1	977
2	-	-	5	11	-	9	-	-	20	-	5	6	1	-	-	1	4	2	5	8	1	1	353
37	2	47	-	18	1	11	7	5	11	-	1	4	5	3	5	4	37	7	22	4	3	4	838
3	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	1	1	1	-	-	-	21
-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2
-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
49	8	39	35	63	2	179	24	32	155	17	31	59	43	2	14	12	134	35	34	125	38	7	3,989
5	-	4	-	3	-	3	-	4	5	-	1	-	4	-	2	1	4	3	6	2	2	-	156
-	-	1	-	1	1	3	-	-	-	-	1	3	2	-	-	-	1	-	6	1	-	-	72
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	3
408	29	653	163	337	28	1,107	88	151	834	155	160	319	261	21	129	64	956	128	457	504	155	52	24,525

MEDITERRANEAN STATION.

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The naval force in the Mediterranean in 1861 consisted of twelve ships of the line; namely, one first rate, ten of the second rate, and one of the third rate, three frigates of the fourth rate, two of the fifth, two of the sixth, with ten vessels of the sloop rate, the remainder being gun-vessels, a schooner, and a receiving ship. The mean strength, corrected for time, amounted to 16,600 men. The sick rate on board in the majority of the vessels ranged from about thirty to seventy or eighty per 1,000 of mean force. In two it was as low as twenty; but in both instances, as the time included is only three months, and as the number of men borne on board was small, their sick-rate can hardly be compared with that of other vessels. The rate is also low in the Marlborough, but this was no doubt owing to a large proportion of her sick having been sent on shore from time to time for hospital treatment. The sick-rate in the Cressy is far above the average; but she left the station at an early period of the year, and returned to England with a large number of invalids and sick on board. The sick rate in the Weser, a small paddle-wheel steamer, which was stationed in the Danube, was also high. The average daily rate of sickness on board ship in the entire force was equal to 878·8; but, including the time lost in the naval and military hospitals on shore, it amounts to 1,026, or in the proportion of 61·8 per 1,000 of mean strength, which exceeds the usual sick rate of the preceding years by about 4· per 1,000.

By referring to Table No. 2, it will be seen that the loss of service from febrile diseases was equal to about sixty-five daily, or in the ratio of nearly four to the 1,000; from disease of the respiratory organs it was equal to 132, or in the ratio of 8·, which nearly equals the high rate of the preceding year, owing, in the present case, to the prevalence of common catarrh. Disease of the heart and blood-vessels were productive of a loss equal to sixteen men, or one in a thousand,

thousand, while from the alimentary organs there was a loss equal to forty-two, or 2·5 per 1,000. The loss from venereal affections was precisely the same as in 1860, namely, 7·7 per 1,000; but there is an increase in the loss from rheumatism equal to nearly two per 1,000. The greatest loss from any one complaint was from common boils, namely, 146, or 8·7, while the loss from ulcer equalled 121, or at the rate of 7·2 per 1,000; lastly, the loss of service from wounds and injuries was equal to 161, or in the ratio of 7·7 per 1,000.

As shown in Table No. 1, the total number of cases of disease and injury amounted to 25,946; 753 were invalided, and 172 died, the former being in the ratio of 45·4 and the latter of 10·4 per 1,000 of mean force. Compared with the preceding year, the death-rate is nearly the same; but there is a reduction of twenty-seven per 1,000 in the number invalided. The preceding year, however, was, with regard to invaliding, altogether an exceptional one, owing to the prevalence of disease of the respiratory organs in a few vessels of the force.

Fever.—Judging by the number of cases, the St. Jean d'Acre was, during the preceding year, the most sickly ship on the station; her returns showed the greatest number of cases of primary fever, though the attacks were less severe and the deaths not so numerous as in some of the other vessels of the force. For the present year it will be seen, by reference to Table No. 6, that the number of attacks in that vessel are again in excess of any other; and the deaths, with the exception of the Neptune, in which it was the same, are also more numerous. During the first quarter, while she remained at anchor in the Tagus, whither she had gone in consequence of the persistence of pulmonary diseases, there were only twelve cases entered on the sick list, each averaging about eight days in duration; but during the succeeding quarter, which was spent partly at sea and partly at Malta and Gibraltar, there were fifty cases placed on the sick list, and three sent to hospital; some of these were more severe, but on the whole they did not remain more than ten or twelve days under treatment. The attacks became frequent about the end of May, soon after the ship's company had been on shore, on leave, at Malta. At first they were mild, but they increased in severity with the advancement of summer, and during the passage to Gibraltar, at which place she remained, occasionally going to sea for a cruise, until the end of August, when she sailed for England to be paid off. After this, febrile attacks continued to occur, though of slight importance compared

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compared with the pulmonary disease, until she arrived in colder latitudes, when they entirely ceased.

Of continued and remitting fever there were 1,105 cases, of which fifteen were invalided, and thirty died, the former being in the proportion of 0·9, and the latter of 1·8 per 1,000 of mean force.

Ten cases of remitting fever occurred in the Agamemnon; eight of these were clearly attributable to exposure to malaria on shore. On the arrival of the ship at Jaffa, a party of twenty-one officers went on a visit to Jerusalem; of these, seven proceeded to the Jordan and Dead Sea; they slept in tents near Jericho, on low land and by a running stream, where the heat during the night was very oppressive. Out of the number, two were attacked with fever, but those who did not go further than Jerusalem escaped. Another party, consisting of six officers, two servants, and a young Russian officer, who had also visited the Dead Sea and Jericho, went on a shooting expedition, and slept near a marshy jungle, with only a boat's awning for a covering; five of them, including the young Russian, were attacked; and a servant who rode to Ramlah, a distance of fifteen miles from Jaffa, and who lost his way on the plains of Sharon, was also attacked, though he did not sleep on shore. The period of incubation in all these cases was exactly fourteen days, counting from the night of exposure to the first feeling of illness. The fever did not assume so low a type as that which prevailed on board at Naples during the preceding year, the accessions being more sudden, the exacerbations severe, and the remissions distinct and well marked; the fever, which lasted from eight to ten days, was followed by a long sound sleep, and in most cases by a rapid recovery. Cases during the preceding year and this, were followed by rheumatism and protracted recovery; they were of malarial origin.

There were fifty-seven cases in the Algiers, the majority of which were contracted on the coast of Syria, where the ship was stationed for five months at a time; but, with the exception of one, which ended in death, they were all of a mild type. Thirty-one cases of a similar type occurred in the Cæsar; they could not be ascribed to any one locality more than another. Seven occurred in the Cressy, and one terminated in death. There were thirty-three in the Amphion, of which two terminated in death. During the first quarter she was stationed off Palermo, occasionally going to

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sea for a few days: the health of the crew was not so good as it had been, owing, as the surgeon supposed, to the position of the ship behind the Mole, where the atmosphere, particularly at night, was much impregnated with gases from sewers. He further states that, in consequence of these gases, four cases of fever which occurred at that time assumed a typhoid form. Other cases, contracted subsequently on the coast of Syria, are reported to have been of a remitting type and relapsing. These also were severe, and one proved fatal. They were the result of exposure on shore, while obtaining water. Quinine was given before the men left, and on their return on board; but whether it was continued for some time afterwards is not mentioned.

There appears to have been a good deal of fever in the Doris; but, generally speaking, it was not severe, the attacks averaging about ten days in duration; none were fatal. The majority of the cases were likewise contracted off the coast of Syria.

Thirty cases occurred in the Exmouth, the majority of which were contracted at Naples, where she lay from the 4th of March until the end of June. The surgeon remarks that the disease had been prevailing extensively in Naples before the arrival of the ship; the town was in an unhealthy condition, and strangers in particular suffered from febrile attacks. The fever was of the remitting form; remissions occurred usually during the day, and exacerbations in the evening. Of the twenty-seven attacked, one died: convalescence was often exceedingly tedious. A slight form of fever of a different character was prevalent at the same time; it seldom lasted more than two or three days, but in some instances it was followed by great prostration. These cases, amounting to sixty-six, were accompanied by severe headache; hence the surgeon in his returns placed them under the somewhat indefinite head of cephalalgia.

Fever of a severe character made its appearance in the Hannibal, at Naples, during the months of January and February; one case ended in death. Subsequently, while off the coast of Syria, other cases occurred, but they were of a much milder type. Fever of a similar character prevailed generally in the James Watt about Midsummer, while she was at Corfu and Suda Bay; the average duration of the attacks was about ten days. All the cases recovered on board. There were eighteen cases of primary fever in the London, the worst of which appear to have been contracted while

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while the ship was off Corfu and the Piræus of Athens, in the months of March and April.*

In the Marlborough, which returned to England about the middle of March, but was re-commissioned, and again went out to the Mediterranean, there were sixty-five cases of fever entered on the sick list; but, with the exception of eight or nine which occurred during the last quarter, they were generally of an ephemeral character: two ended in death at the Naval Hospital. There were twenty-nine cases of primary fever in the Mars, the majority of which occurred while she was off the coast of Syria, in midsummer. She visited Beyrout, Sidon, Joppa, and Cyprus: one death took place. In the Melpomene there were five cases, and two deaths; one occurred at Malta, where the fever was contracted, but the other was contracted on shore, on a trip to Jerusalem.

An eruption of fever of rather a severe character occurred in the Neptune in April, soon after the crew had been on shore on leave at Malta, where the same kind of fever was prevalent. "The symptoms were of the mild typhoid, or enteric type, marked chiefly by prostration of strength, giddiness, and loss of appetite, with or without the characteristic spots on the trunk, and generally lasting about three weeks. Convalescence was extremely slow, and the patients in many cases were attacked by rheumatic pains, sometimes slight, but often very severe. With regard to the origin of the complaint, there can be little doubt that it was brought on board from Malta." And as it prevailed long afterwards, during a lengthened cruise, there is reason to suppose it was propagated by infection. It seemed to leave a predisposition to rheumatism, from which the patients suffered occasionally for six months afterwards. Three of the patients died after their removal to Malta Naval Hospital.

A few cases of a severe character occurred in the Queen, at Corfu, and two terminated in death.

Fever of a typhoid character made its appearance in the Racoon, at Gibraltar, on the 9th of June. The origin and cause of the disease was considered to be obscure; but the crew had been permitted to land on leave, and while on shore they were the reverse of temperate, and slept in houses which were dirty and ill ventilated; it was, therefore, supposed that the

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* Rheumatism was of frequent occurrence, but it is not mentioned in connexion with fever.

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the fever might be ascribed to these sources, for it had been, and was at the time, prevalent in Gibraltar. On the other hand, however, cases occurred amongst some of the men who did not land; and as the ship was in a most satisfactory condition with respect to cleanliness, the bilges free from smell, and the ventilation good, other causes were to be sought for to account for their presence: whether found or not is not stated; but there can be no doubt that the fever was infectious; although whether it originated in the ship, or was brought into her from Gibraltar, it is impossible to determine. On the 29th of July she left Gibraltar, and visited several places on the opposite coast of Morocco. Subsequently she returned to Gibraltar, and after remaining there for a fortnight sailed for Malta, the Piræus, Vourla Bay, and finally anchored at Smyrna, on the 18th of September. The last case was entered on the sick list on the 27th of July, two days before she left Gibraltar.

The more characteristic symptoms were diarrhœa, abdominal tenderness, gurgling under pressure in the right iliac fossa. "In some, the rose-coloured spots were visible on the skin of the chest and abdomen." The duration of the disease averaged about a month. Like the fever in the Neptune, it was followed by rheumatism and severe pains in the joints. Two cases terminated in death.

Fever, apparently of a similar type, made its appearance in the Renown in January at Malta, where the ship's company were frequently permitted to land on leave; there was at the same time a great increase in the number of catarrhal affections, which the surgeon thought were but minor effects of the same poison which produced the fever. On the 28th of February the ship sailed from Malta, and during the following four months she touched at Ayas, Beyrout, Sidon, Jaffa, Korffa, Acre, and Tyre. In May, as the temperature was increasing, the lower deck ports were left sloped during the night, instead of being closed, as they had been previously, and soon afterwards the febrile attacks began to decrease.

As mentioned in the returns from other ships, these fevers were followed by severe attacks of rheumatism. "The sciatic nerves and articulations of the pelvic bones have been chiefly affected, causing intense suffering and lameness. Relapses were frequent. A very large proportion of the cases of fever have been thus affected during their convalescence, while others had swelling of the testes."

Sixty-six cases of primary fever were entered on the returns in the Victor Emmanuel, but of these about fifty were of an ephemeral

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ephemeral character; the others were severe, but none died. In the Weser, which was stationed in the Danube, there were five cases of primary fever, two of which had a fatal termination.

It is mentioned in the returns that fever was epidemic at Beyrout in the months of October and November; it attacked all classes, from the highest to the lowest natives and foreigners. It was, generally speaking, not severe, and seldom lasted more than a few days, though there were cases which lasted weeks; invariably it was followed by great prostration and a long convalescence, but it seldom proved fatal either on shore or on board ship, though few cases occurred in the latter. The origin of the disease was not understood, though it seemed to depend on malaria. Six cases of the same kind of fever occurred in the Surprise in August and September; they were particularised by great prostration of strength. It is not mentioned that they were followed by rheumatism; but eleven cases of that disease occurred soon after, of which three were sent to hospital.

Twelve cases occurred in the Terrible during the six last months of the year at Smyrna, and were ascribed to malaria arising from the coast, about two miles to the northward from where the ship was anchored; they assumed a distinctly remitting form; besides the above, there were other cases of an ephemeral character, probably the result of the same cause.

It thus appears, that fever occurred in the St. Jean d'Acre after leaving Malta, and subsequently at Gibraltar during the summer months; it also appeared in the Racoon at the same time and place; in the Agamemnon, from exposure on shore on the coast of Syria, in August; in the Algiers and Amphion, about the same time and at the same place; it likewise occurred in the Doris on the same coast, but early in the year in the Exmouth at Naples in Spring, and in the Hannibal at the same place in January and February, and on the coast of Smyrna in Summer; in the James Watt, while in the Gulf of Venice, during Midsummer, in the London about the same time, and in the same locality, and also at Athens. In the Marlborough, at Messina, Naples and Malta, and in the seas adjacent during the last quarter; in the Mars and Terrible on the coast of Syria in Midsummer, in the Renown at Malta in January, and in the Neptune at the same place, but two months later. It is therefore hardly possible to say that it was more prevalent at one place than another, or at one season than another; the typhoid form, however, appears to

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to have been chiefly confined to large towns with a crowded population.

The fever or fevers are described as assuming different types. One, the so-called Mediterranean fever, which occurs on the coast of Syria, and at other places where there are marsh emanations, is distinctly remittent; another, the typhoid, which occurs principally at Malta, Gibraltar, Constantinople, Naples, Athens, and in ships of the line principally, sometimes described as remitting, and at others as continued: this form is unquestionably communicable, but not in a high degree. There is also a fever reported under the head of gastric fever, which has not been referred to any special cause, and does not appear to manifest any characteristic symptoms; its claims to a typical distinction are not established. Then, there is what is called ephemeral fever, which may arise from the same causes, which produce either of the two first-mentioned forms, though acting with less force; or it may arise from a variety of other causes, such as cold, intemperance, or over-exertion. Whether the fever prevalent during the past and present years which has been followed by rheumatic pains, is a distinct species, or whether the rheumatic supervention was accidental, there is no means of ascertaining; but its resemblance to the Dengue of the West Indies is very remarkable.

Whether either the typhoid or remitting fever arises from foul holds, as is sometimes supposed, may be doubted, for although foul holds and fever may sometimes be found to be co-existent, yet the contrary is frequently the case; that is, there are ships in which the holds have been foul for years, without the occurrence of fever, while there have been others with clean holds, from which fever has seldom been absent. But, after all, there appears to be no fixed idea of what constitutes a foul hold, capable of generating special diseases according to undeterminate times and circumstances. Some regard chips of wood, shavings, and bilge-water as highly detrimental to health, while others affirm that these materials, and others which accumulate to a greater or less extent in all sea-going ships, have little or no effect on health, neither do they under any circumstances ever generate a specific form of epidemic disease.

Eruptive Fevers.—There were 105 cases of small-pox, of which nine terminated in death, two of scarlatina, and the same number of measles.

Five cases of small-pox occurred in the Agamemnon in December

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December at Malta; three of the cases were contracted on shore, where the disease was prevalent. Four of the patients had been vaccinated, but the fifth showed no vaccine cicatrix: all the cases were mild. One case of the same nature, which was also contracted at Malta, occurred in the Algiers. Three cases appeared in the Cressy; they were consequent on infection contracted at Naples.

There were fifty-eight cases in the Doris; the first occurred early in the month of January; the patient, who belonged to one of the boats, had been on shore on duty at Beyrout, where the disease was prevalent. There was no mark of vaccination visible on either arm. Unfortunately, it was impossible to find accommodation for him on shore, but he was placed in a screened berth on the main deck, and isolated as much as possible from the rest of the ship's company. The disease assumed the confluent form. The fever became typhoid, attended with diarrhœa, and bleeding from excoriated patches on the forehead and thighs: he died on the 23d of January. The emanations of the body previous to death were exceedingly offensive, and, as the surgeon supposed, highly calculated to promote the spread of the disease amongst the ship's company. "Until about the 20th of January, and nearly three weeks after the appearance of the disease, there was nothing to indicate its extension; then, however, cases began to appear in a modified form. During the next fortnight there were many cases of fever, both with and without eruption. After that, it began to decline, assumed a milder character, and finally ceased on the 24th of February."

At Beyrout it was difficult to find accommodation on shore for those affected; but several small houses near the anchorage, each containing one, and some two habitable rooms, were rented; and on the 29th of January thirty-one cases were landed, as were the cases which subsequently occurred as soon as the disease declared itself. The generality of the cases were of a discrete or modified character; six were confluent, and three semi-confluent. Besides the first, two other cases terminated in death; with the exception of the first, all the patients showed unequivocal signs of having been vaccinated.

Small-pox made its appearance in the Racoon at the same place on the 25th of January; altogether, there were seven cases, and one proved fatal. The patient showed an indistinct mark of vaccination, and believed that he had previously had an attack of small-pox. These cases were also sent on shore for treatment.

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Small-pox was introduced into the Liffey by an invalid sent on board at Beyrout from the Doris, for a passage to Malta; he was attacked two days after he came on board, and subsequently, when convalescent, sent to the temporary small-pox hospital at Beyrout; but the disease had already spread to the ship's company, amongst whom there occurred eleven cases; with one exception, they assumed a modified form, and on all the patients, except one, a distinct vaccine cicatrix was visible; in that case the eruption was discrete.

Two cases of modified small-pox occurred in the Mars at Malta, where the disease was prevalent. The surgeon tried to vaccinate twenty boys, some of whom showed doubtful cicatrices, but failed to produce the disease; the boys declared they had been vaccinated: the means used were dried points.

Three cases occurred in the Terrible. Out of the patients attacked, one was supposed to have been infected at Naples, and the remaining two, who were messmates, at Malta. One of these, however, supposed he caught the disease by inadvertently washing in the water that had been used by the other; all three bore good marks of vaccination.

Lungs, &c.—Compared with the preceding year, there is a vast reduction in the number of cases of disease of the respiratory organs, especially of the more formidable kinds. The ratio of inflammatory attacks in 1860 per 1,000 of force, amounted to 32·1; for the present year it is only 28·9: the ratio of consumptive cases for the former was 18·4; for the latter it is only 7·8; in the same manner the number invalided is reduced from 1·6 and 27·2 to 1·4, and 11·8 respectively, while the death-rate is about the same for both years, and does not exceed the death-rate for a series of years.

The most sickly vessel during the previous year was universally acknowledged to be the St. Jean d'Acre; fevers and pulmonary complaints of a somewhat anomalous character began to attack the crew early in the Spring, and rapidly increased in numbers as the Summer advanced. To account for the increase of sickness was not an easy matter; but as the lower deck was very much crowded when all the hammocks were down, and the men turned into them, the space was thought to be insufficient for a proper supply of fresh air, though the proportionate space and the mode of berthing the crew were the same as they had been before, and nearly the same as in the other line-of-battle ships on the station,

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station, but more than all, they were the same as had been common in the service from time immemorial.

Still, as it was supposed the sickly condition of the crew might be connected with the defective ventilation of the lower deck, a number of the hammocks were removed to the deck above, the ports and scuttles were directed to be kept open when possible, and additional means of ventilating the ship throughout adopted, but apparently with no benefit to the ship's company; for pulmonary attacks continued to be as frequent as before. The ship went to sea, to try what effect this would have; but the change from the comparatively close atmosphere of Malta Harbour to the fresh breezes of the open sea, was equally ineffective. Suspicion fell on the holds; accordingly they were cleared out, but there was nothing found there which could be supposed to affect the health of the crew, but more especially nothing which could be supposed to give rise to a special form of disease in the respiratory organs. As neither the improved ventilation of the decks, nor the cleansing and purifying the holds, seemed to have the slightest effect in arresting the progress of the disease, the ship was ordered to proceed to Gibraltar, and thence to Lisbon, where she arrived on the 29th of December, and there remained until the 3d of April.

In January the health of the crew began to improve, and the pulmonary attacks to diminish in frequency. In the beginning of February the surgeon reported the ship remarkably healthy, there being, exclusive of forty-three in hospital on shore, only twenty-five sick out of a complement of 873. This he thought was owing to the fineness of the weather, and the great attention paid to ventilation; still the disposition to pulmonary disease existed on board. Since her arrival, 150 men had been added to the crew, which of course increased the crowding on the lower deck at night-time, and also, as was supposed, increased the number of low pulmonic complaints, thus showing that the cause, whatever it may have been, was still in existence; and he observes, "I fear the high temperature we shall soon be exposed to on our return to the station will further develop disease."

The ship arrived at Gibraltar on the 12th of April; then proceeded to Malta in May, where she remained three weeks, and again returned to Gibraltar. During these three months, namely, from the 1st of April to the 30th of June, there were six cases of bronchitis, one of pleuritis, nine of pneumonia, twenty-five of "cachexia pulmonalis," and five of pleurodynia, put on the sick list. The weather is described as as having been "unexceptionable; the ship is kept very clean, and as well ventilated as the present means will admit of," better ventilated than most other ships. July was spent between Gibraltar and Tangiers, the ship's company still continuing sickly, though the weather was cool and pleasant, and a free circulation of air kept up all over the ship by the ports being kept constantly open. Fifteen cases of the pulmonary disease, six of pleurodynia, and three of an inflammatory character, were added to the list. "The continuance of low cachectic disease, with pulmonic symptoms, often with a febrile action, still indicates the continued existence of some malarious cause within the ship. The cases of fever have been very tractable, but apt to pass into the endemic pulmonary complaint, or end in palpitation."

The St. Jean d'Acre continued at Gibraltar and Tangiers, occasionally going to sea for a cruize until the end of August, when she was ordered to return to England to be paid off. As the surgeon had predicted, the number of sick increased steadily with the heat of the weather, until about the first week in August, when the heat was greatest; the number under treatment average a hundred, exclusive of men in hospital on shore. "Afterwards the weather became cooler, and the state of the sick list improved; but in the meantime the ship had been ordered home to be paid off." The latter is a significant fact, coupled with what follows: "A few days after leaving Gibraltar we encountered light north-west breezes and very cool weather, which had a most salutary effect upon the invalids; the sick list rapidly diminished, and on the arrival of the ship at Plymouth most of those even who had been embarked from the hospital, had become fit for duty. Of course the anticipation of liberty, and the prospect of long leave, led the men to put the best feature on their cases, and really aided the change of climate in restoring them to health." The surgeon expresses his conviction that the cause of the cachectic disease which principally attacked the lungs, was "malarious emanations from the decay of woody fibre or saw-dust left in the channels by the ship-builders; this being constantly in a moist state, would naturally act more injuriously in a high temperature, and, in conjunction with the over-crowded state of the sleeping deck, sufficiently accounts for the disease."

The sudden cessation of this disease, both in the Cressy and in the St. Jean d'Acre, as it were, on the instant they were ordered home, is not without significance, as it naturally leads to the inference that the disease was either in some way

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connected with the mind, or that the patients were not free from malingering.

It is mentioned in the Report for the preceding year, that the same disease made its appearance in the Neptune about Midsummer. Here, as in the St. Jean d'Acre, the ventilation was considered to be defective; this was improved, and the attacks ceased; still the number of men invalided for phthisis was unusually large, namely, thirty-three.

During the present year there were only ten cases of an inflammatory, and eight of a phthisical character, put on the sick list; twelve, however, of the former were invalided, and two of the latter died; the number of invalided is still large; but about two-thirds of the number appear to have been cases in which the disease was developed while the men were under treatment in the Naval Hospital at Malta; still the difference between the past and present year is remarkable, namely, forty for the former, and twelve for the latter.

There was no unusual prevalence of pulmonary disease in the Exmouth in 1860, though she lost thirty-four men by invaliding, and of these, thirty-one were supposed to be affected with phthisis, which had been contracted or developed while under treatment in Malta Hospital. The number invalided for the present year amounted to fifteen for phthisis and five for diseases of an inflammatory type. In the James Watt there were thirty-three invalided for phthisis during the past against fifteen for the present year; in the Marlborough and Agamemnon the loss under this head was the same for both years; but in the London the number invalided in 1860 was double the number invalided in 1861.

But the following Table will best show the comparative loss by invaliding from phthisis for 1860 and 1861, in the following ships-of-the-line:

	1860.	1861.
Cressy	46	13 in 4 months.
James Watt	33	15
London	16	8
Neptune	37	12
Renown	15	6 in 9 months.
Victor Emmanuel	10	7
Hannibal	16	11
Cæsar	8	7
Queen	10	8

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	1860.	1861.
St. Jean d'Acre	110	36 in 8 months.
Exmouth	31	15
Agamemnon	4	7
Marlborough	7	7

It thus appears that seven of the above vessels lost more than double the number of men by invaliding for phthisis in 1860 than in 1861, though the disease, which appeared to be peculiar only to the St. Jean d'Acre and Cressy, did not exist in an epidemic form in any other vessel; why the loss in these was so large was shown in last year's Report to have been caused by the disease attacking men sent to Malta Naval Hospital for the treatment of other complaints; in fact, so many men were attacked while in this establishment, one of the most perfect in the Naval service, that, as previously mentioned, there were just grounds for believing that the disease first developed in the St. Jean d'Acre had acquired the power of propagating itself even amongst men in the well ventilated wards of the hospital. At the same time it may be doubted whether an extensive system of malingering was not carried on in the St. Jean d'Acre and Cressy, and likewise in the hospital.

During the present year eighty-six cases of phthisis were received into Malta Naval Hospital from the fleet, against 258 for the previous year, thus showing a reduction in the number of cases of exactly one-third; the vessel in which it prevailed most extensively having been temporarily withdrawn from the station, while another in which the cases were also numerous, returned to England early in the year to be paid off. In the other remaining vessels, the Neptune and probably the James Watt, in which it might be assumed the disease had also appeared, it entirely ceased; and in none of the other ships of the line, or in any of the smaller vessels, was there any unusual excess in the number of pulmonary complaints observed. Even in the hospital the supervention of phthisis on other complaints gradually became less common, until attacks of this kind were reduced to the ordinary standard of past years.

As previously noticed, various opinions were formed respecting the true nature of the disease which prevailed in the St. Jean d'Acre, the Cressy, and in the Naval Hospital; but the idea of its being tubercular or phthisical, as was at first as-

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sumed, appears to have been generally abandoned; in fact, one of the surgeons of the fleet mentions, that although he had been on surveys where many of these cases were invalided, he never could detect the physical signs which other medical officers said they could hear. But even those who were strongest in their convictions that the disease was truly phthisis, admit that it chiefly attacked men who had recently joined the service on the bounty system, and were anxious to quit it as soon as possible. "Amongst these there was an undue proportion of idle, worthless characters, schemers and drunkards, men who sold their clothes when they found an opportunity, and spent the money in dissipation; generally speaking, they were defective in physical development, naturally of weak constitution, prone to be attacked by disease, and, unlike the generality of men-of-wars men, were always eager to avoid drill, and to have their name put on the sick list."

Considering, therefore, that the disease appeared only in two or three ships in the squadron and in the Naval Hospital,—that it rapidly began to disappear when the ships were ordered home to be paid off, and that it prevailed principally amongst the worst and most useless classes of men in these ships, and amongst men belonging to other ships in the Naval Hospital, —that a large proportion of the men who had been invalided for phthisis were free from the symptoms of that disease when they arrived in England, and subsequently re-entered the Navy in good health, it becomes a question whether the disease, whatever it may have been, was not, in some instances, simulated, or if not simulated, artificially produced for the purpose of getting rid of the service;—or, whether it was a disease originating entirely from malarious emanations, or from the holds of a few ships only; or, from an infectious virus or blood-poison, first generated and propagated amongst the men in one ship, and subsequently communicated to others, it is very difficult, if not impossible, to arrive at anything like a satisfactory conclusion.

An eruption of influenza occurred in the Gannet, in January, at Constantinople, where it was prevalent both amongst Turks and foreigners. In a crew of 125 men, twenty-seven were put on the sick list.

The same disease broke out in the Algiers when she was off Beyrout, and attacked the crew like an epidemic: 133 were put on the sick list.

Stomach

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Stomach and Bowels.—Diarrhœal attacks occurred in the ratio of about 103 to the 1,000 of mean force, a decrease on the ratio of the preceding year. These affections caused a loss equal to about thirty men per diem, though in no case did the disease terminate in death. The greatest number of cases in proportion to the crew occurred in the Exmouth. Towards the close of June the attacks became numerous at Naples, and continued to increase after she went to sea, and while at anchor at Palermo and Castellamare; the disease increased in severity as the weather became hot, and several cases assumed a dysenteric character. Beyond the heat of the weather, and the use of fruit, which was abundant, there was no special cause to which the disease could be ascribed. In the same vessel there were twenty-two cases of dysentery, one of which appears to have been fatal.

An eruption of diarrhœa took place in the Orion while employed on the coast of Syria, during the hottest part of the Summer; about fifty cases were put on the sick list.

There were seventy-nine cases of dysentery on the sick books, of which nine were invalided, and seven died.

A singular eruption of the last named disease took place in the Scourge in August. The first case occurred on the 2d, as the ship was leaving Malta for Gibraltar; a second occurred on the same day; on the 4th there was a third, and on the 6th a fourth; at first the symptoms were those of simple diarrhœa, but it soon assumed a more serious form. Attempts were made to discover the cause of the disease. The water in use had been condensed on board, and contained hardly a trace of any salt. "The holds and bilges were minutely examined, and found to be clean. Sometimes, however, an intolerable stench was perceptible in various parts of the ship, and this was generally traced to a dead rat. Twice one of these animals was found drowned and putrid in the suckers of the pump through which the water in use for washing and drinking was drawn, but at that time scarcely any diarrhœa existed. Afterwards, in September, it was discovered that the water contained very minute particles of brass, produced by the friction of the connecting rod on the cranks of the pump used for drawing the water from the tanks; it was then supposed that this, in connexion with other causes, might act as an exciting cause; but additional cases occurred even after the defective pump had been replaced by another." After this the search after an efficient cause seems to have been given up. Of the eight cases, one died on board and one in hospital. A large proportion of cases of diarrhœa occurred

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occurred at the same time. Though no cause could be assigned for this singular outbreak, it undoubtedly existed within the ship.

Seventeen cases of tænia occurred in the Melpomene, respecting which the surgeon* makes the following observations:—

> "The cases of tape-worm having been unusually numerous in this ship, I insert them here, in the order of their occurrence, with such reference to the patient's habits as I could obtain:—
>
> "In addition to the interest which the history of human parasites possesses, I was led to pay increased attention to the frequent occurrence of tænia in the ship, with the view of ascertaining the truth of a report that the water obtained from the Cat River at Beyrout contained the ova of the worm. The impression was derived from the fact that children, as well as adults, in the population of Beyrout, are very commonly the subjects of the affection; but the practice of eating uncooked pork, to which our men in particular were addicted, I think explains the frequency of the complaint, and disposes of the belief that the water of Beyrout was the vehicle of its introduction.
>
> "The means adopted for the expulsion of the parasite merit some notice, as the treatment by kousso and by the oil of male fern, enabled me to judge of the relative value of these drugs as anthelmintics.
>
> "I was fortunate in procuring the freshly-ground root of the kousso at Beyrout, and with it the worm was rapidly dislodged; but I am inclined to doubt the value of the medicine, because the patients to whom it was administered re-appeared with the complaint a few months afterwards, and its powerful action brought on troublesome prolapsus of the rectum. I then resorted to the oil of male fern, procured in its pure and fresh state both at Malta and from Kingston in Jamaica. With it the success was more complete. The worm or any joints expelled after the first portion showed no signs of vitality, and the remedy is free from the objection to kousso, the insoluble dose of which is large, and often provokes emesis. The sastræa yields a more efficacious extract than the ordinary male fern, but I was unable to obtain the former. The treatment, however, is seldom complete without a course of quassia with tinctura ferri sesquichlor, after the presumed expulsion of the entire worm."

Liver, &c.—There were only thirty-two cases of disease of the liver, of which six were invalided, and three died. Seventeen cases of what is called sub-acute jaundice occurred in the London between the 20th of March and the 10th of April, with reference to which the surgeon observes—" The only explanation I can offer for the appearance of so many cases at that particular

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* Dr. Vans C. Clarke.

particular time is, that towards the end of March northerly winds prevailed, reducing the temperature, and that just then the ship left for a cruise off the Piræus and Smyrna. During the cruise, the ship's company were necessarily more exposed to cold in their night watches, by which the functions of the skin were checked. All the cases occurred in young subjects, and readily yielded to aperients, bitters and alkaline medicines." Similar eruptions of this complaint have been frequently noticed in the medical reports of the navy; but it is difficult to imagine that they could be ascribed wholly to the state of the weather, or to any special cause. Except in this instance, the disease, as sometimes happens, did not occur in groups in any other ship of the squadron.

Genito-Urinary System.—Venereal complaints occurred in nearly the same ratio as on the preceding year; twenty cases of secondary syphilis, and eight of orchitis, were invalided, but no death took place under this head.

Upwards of ninety cases of venereal occurred in the Cressy, the majority of which appear to have been contracted at Naples. The crew of the Exmouth in like manner were numerously infected at the same place; 121 cases of syphilis and forty-two of gonorrhœa and orchitis were entered on the sick list during the year, entailing a loss of service equal to about twelve men daily. In the Hannibal there were fifty-nine cases of syphilis, and twenty-nine of gonorrhœa and orchitis; thirty-three of the former and eleven of the latter were also contracted at Naples during the first quarter; and in the Doris there were about forty cases, most of which were referrible to Naples and Messina.

In the Algiers there were twenty cases, but two-thirds of the number were contracted in England before she left Portsmouth. The following extract from a nosological return sent from the receiving ship Hibernia, stationed at Malta, shows how syphilitic disease may be engrafted on communities where its existence is hardly known: "On the 29th of July the sick list was small, and continued so until the arrival of the Sanspareil from England in the beginning of September, with supernumeraries on board. Most of these were sent into the Hibernia, and ten were immediately put on the sick list with venereal and other diseases." Had these men been allowed to go on shore, the probability is they would have inoculated a considerable number of prostitutes at Malta.

Of seventy-eight cases of venereal which occurred in the

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James Watt, upwards of one-half were contracted at Naples during the early part of the year.

In the Liffey there were thirty-three cases of venereal, of which eighteen were contracted while she lay at Malta during April, May, and June, thus showing that, notwithstanding the preventive measures adopted by the police, the disease is still extant amongst some of the lower orders of the community; it is nevertheless not only possible, but probable, that the most of these cases might have been traced to one or two individuals who had escaped the notice of the police.

There were upwards of sixty cases in the London. Regarding these, the surgeon mentions that seven were the remains of cases previously contracted at Malta; the cases added during the year were mostly secondary affections, the result of primary cases contracted either at Naples or Malta, towards the latter end of the preceding year, or in England, the patients being men recently arrived on the station.

One hundred and sixty cases occurred in the Marlborough; but at least three-fourths of these were contracted at Portsmouth, while fitting out in April, May, and June.

There were comparatively but few cases of venereal in the Mars; those that did occur, were contracted principally in Messina, Palermo, and Corfu.

Eighty cases were entered on the sick list in the Neptune, which are not referrible to one place more than another; the ship visited Malta, Messina, Palermo, Naples, and other places. Ninety cases occurred in the Queen; they seem to have been contracted at Malta, Corfu, and other ports.

It is remarkable, that although the crew of the Racoon, amounting to 275 men, had permission to land on liberty, only three cases of syphilis, and seven of a gonorrhœal character, were put on her sick list during the year.

There were upwards of thirty cases in the Terrible, which were principally contracted at Messina during the first quarter. In the Victor Emmanuel there were 108, the majority of which appear to have occurred at Naples, Messina, and Palermo; of the above, seventy-one were cases of primary syphilis.

In the Agamemnon there were only twenty cases of syphilis, and twelve of a gonorrhœal character; this comparative exemption the surgeon accounts for thus: "First, during the six months spent on the coast of Syria, no general leave was granted to the crew. In the second, it must be ascribed to the system of inspection established at Malta, and which has been attended with the best effect; for after general

leave

leave had been twice granted at that place, not a single case of the disease occurred."

There were about twenty cases of primary syphilis in the Algiers, but most of the men had been infected before they left England. "On the station there has been scarcely any of that disease amongst the ship's company."

The crew of the Victor Emmanuel were frequently on leave at Malta during the Midsummer quarter, but contracted, comparatively speaking, no venereal disease; the system of inspecting the common prostitutes, the surgeon observes, has been of the utmost advantage to the public service.

There were seventy-four cases of stricture, of which twenty were invalided.

Two men died of disease of the kidneys, one from albuminuria, the other from granular degeneration.

Rheumatism, &c.—Compared with the preceding and former years, there is a large increase in the number of rheumatic complaints, but, contrary to what might have been expected, the loss by invaliding is considerably less. As previously mentioned in the remarks on fevers, the most obstinate of these affections appeared to have followed febrile attacks, as was the case in the Dengue fever of the West Indies in 1829–30. The disease seems to have prevailed with most severity during the warm months, especially in ships stationed off Beyrout, and on other parts of the Syrian coast, where fever was at the time prevalent. The total number of cases in the force amounted to 1,872, or in the ratio of 112·8 per 1,000, an increase of nearly a third on the ratio of the preceding year. This disease, in fact, appears to have taken the place of the bronchial affections which prevailed so generally in the squadron during the previous year, and it is not unworthy of notice, that the attacks were most general amongst the sickly and worthless characters of the fleet. In this it resembled the bronchial affections of 1860.

In the Neptune, rheumatism after fever was not only common, but it also occurred separately, though not often accompanied with constitutional disturbance; but there was pain and swelling of the affected joints. None of the officers of the ship were attacked either with fever or rheumatism. From these affections the weak and ill-nourished portion of the crew suffered most. In the same manner a large proportion of the crew of the Racoon, a twenty-two gun screw corvette, were attacked with rheumatism in September; and subsequently while cruising in the Archipelago, a large number of the

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the people were attacked with rheumatism, which was at first ascribed to the state of the weather. "Nearly all those patients who had suffered from fever were attacked, and in these cases the disease was more intractable than in others that occurred idiopathically." The disease continued to prevail until November, when the ship arrived at Malta. It is also mentioned in the returns from the Exmouth, Renown, and other ships, that it was by no means uncommon for patients recovering from fever to be attacked with severe and persistent rheumatism.

In some instances it was assumed that the disease was feigned, and this is by no means improbable, considering the character of the men amongst whom it was most common.

One death took place from rheumatism, complicated, it is assumed, with other diseases and general decay; the patient died in Haslar Hospital; two died from disease of the hip joint, and one from strumous disease and caries.

Erysipelas was most prevalent in the Cæsar and James Watt in the early part of the year, and one death occurred under this head in each ship. The total number of cases in the entire force amounted to seventy-nine; but, with the exception of the two vessels just named, it did not assume an infectious or epidemic form in any of the others.

Two deaths occurred from lumbar, and one from scrofulous abscess; there was also a death from pyæmia.

One death is reported from cancer of the pylorus.

Wounds, &c.—Fourteen men were killed by falling from aloft while engaged in the discharge of their duty, one by a mast falling on him when in the act of sending up top-gallant yards, one by a block, and another by a bolt falling from the rigging; two by the premature explosion of a cartridge when loading a gun; one was accidentally shot by a sentry, and one died of injuries sustained in a disturbance on shore. Eight were drowned by falling overboard into the sea, five by the upsetting of boats; one was found drowned in Malta Harbour; one man died from drinking a solution of chloride of zinc in mistake for champagne, one hung himself, and there was one death from causes not stated. Total under this head, twenty-one from wounds and injuries, and fourteen from drowning, one from poison, and one from suicide. Three of the above were marines; all the rest were blue-jackets.

Invalided.—Nineteen men were invalided for the sequela of

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of fever, forty-eight for disease of the brain and nervous system, and 223 for disease of the respiratory organs; of these, twenty-four were of a bronchitic, and 196 of a phthisical character, a decrease of somewhat more than one-half the proportional number for the preceding year. Ninety-eight were invalided for disease of the heart and blood-vessels, twelve for disease of the alimentary organs, and six only for hepatitis, or disease of the liver. Six were invalided for organic disease of the kidneys, twenty for constitutional syphilis, eight for orchitis, twenty for stricture, and six for incontinence of urine, making an aggregate of sixty, forty of which may be justly ascribed to venereal. One hundred were invalided for rheumatism and disease of the bones and ligaments, twenty-five for disease of the eyes and ears, thirty-two for ulcer, ten for abscess, and fourteen for other diseases of the skin and cellular tissue; thirty-two for debility, old age, and dropsy, thirty-nine for accidental wounds and injuries, and thirty-three for hernia, making a total of 753, or in the ratio of 45·4 per 1,000 of mean force.

The total loss by invaliding and death amounted to 925, or in the ratio of 55·8 per 1,000, a reduction on the loss of the preceding year of about twenty-four to the 1,000.

TABLE, No. 1.

SHOWING the Number of CASES of all DISEASES and INJURIES, and the Number INVALIDED and DEAD, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever -	1,105	66·6	15	·9	30	1·8
Intermittent Fever - - -	211	12·7	4	·2	—	—
Small-pox - - - - - -	105	6·3	- -	- -	9	·5
Measles - - - - - -	2	·1	—	—	—	—
Scarlatina - - - - - -	2	·1	—	—	—	—
Disease of the Brain - - -	1	·1	- -	- -	3	·2
Apoplexy - - - - - -	5	·3	- -	- -	4	·2
Epilepsy - - - - - -	34	2·	18	1·	—	—
Paralysis - - - - - -	11	·7	10	·5	—	—
Insanity - - - - - -	14	·8	15	·9	—	—
Delirium Tremens - - -	72	4·3	1	·1	3	·2
Headache, &c. - - - -	303	18·3	4	·2	—	—
Inflammation of the Lungs and Pleura - - - - -	479	28·9	24	1·4	11	·7
Phthisis and Hæmoptysis - -	130	7·8	196	11·8	36	2·2
Influenza and Catarrh - -	2,784	167·7	—	—	—	—
Cynanche - - - - -	877	52·8	1	·1	—	—
Asthma - - - - - -	8	·5	2	·1	—	—
Functional and Organic Disease of the Heart - - - -	152	9·2	81	4·9	9	·5
Hæmorrhoids - - - -	63	3·8	4	·2	—	—
Varix - - - - - -	22	1·3	13	·8	—	—
Inflammation of the Stomach and Bowels - - - - -	20	1·2	1	·1	5	·3
Dysentery - - - - - -	79	4·8	9	·5	7	·4
Diarrhœa - - - - - -	1,712	103·1	2	·1	—	—
Constipation and Colic - -	329	19·8	—	—	—	—
Inflammation of the Liver - -	32	1·9	6	·4	3	·2
Jaundice - - - - - -	78	4·7	—	—	—	—
Splenitis - - - - - -	2	·1	1	·1	—	—

TABLE, No. 1.—Showing the Number of Cases of all Diseases, &c.—*continued.*

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Inflammation of the Bladder and Kidneys - - - -	22	1·3	6	·4	2	·1
Syphilis - - - - - -	1,071	64·5	20	1·2	—	—
Gonorrhœa - - - - -	241	14·5	—	—	—	—
Orchitis - - - - - -	313	18·9	8	·5	—	—
Stricture - - - - - -	74	4·5	20	1·2	—	—
Incontinence of Urine, &c. - -	21	1·3	6	·4	—	—
Rheumatism - - - - -	1,872	112·8	80	4·9	1	·1
Gout - - - - - - -	4	·2	1	·1	—	—
Disease of the Bones and Joints -	68	4·1	20	1·2	3	·2
Ophthalmia - - - - -	179	10·8	2	·1	—	—
Amaurosis and Cataract - -	16	1·	18	1·1	—	—
Otitis and Deafness - - -	60	3·6	5	·3	—	—
Erysipelas - - - - - -	79	4·8	2	·1	2	·1
Scrofula - - - - - -	16	1·	8	·5	—	—
Bubo (*Symp.*) - - - -	255	15·4	—	—	—	—
Phlegmon and Abscess - -	5,479	330·1	10	·6	4	·2
Ulcer - - - - - -	1,918	115·5	32	1·9	—	—
Psora - - - - - -	153	9·2	—	—	—	—
Eruptions, &c. - - - -	244	14·7	4	·2	—	—
Dyspepsia and Debility - -	625	37·7	27	1·6	1	·1
Scurvy - - - - - -	2	·1	—	—	—	—
Dropsy - - - - - -	22	1·3	5	·3	—	—
Worms - - - - - -	42	2·5	—	—	—	—
Cancer - - - - - -	- -	- -	- -	- -	1	·1
Purpura - - - - - -	2	·1	—	—	—	—
Wounds and Injuries - - -	4,337	261·3	38	2·3	22	1·3
Burns and Scalds - - -	156	9·4	1	·1	—	—
Hernia - - - - - -	41	2·5	33	2·	—	—
Drowned - - - - - -	- -	- -	- -	- -	14	·8
Not stated - - - - -	- -	- -	- -	- -	1	·1
Poison - - - - - -	2	·1	- -	- -	1	·1
TOTAL - - -	25,946	1561·2	753	45·4	172	10·4

Table, No. 2.

Showing the Number of Days' Sickness from each Disease, and from Injuries, the Average Number of Men Sick Daily, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever	15,749	5,960	21,709	59·5	3·6
Intermittent Fever - - -	2,087	53	2,140	5·8	·3
Small-pox - - - -	2,363	877	3,240	8·9	·5
Measles - - - - -	2	166	168	5·	—
Scarlatina - - - -	37	- -	37	—	—
Disease of the Brain - -	2	- -	2	—	—
Apoplexy - - - -	51	- -	51	—	—
Epilepsy - - - -	349	43	392	1·1	—
Paralysis - - - -	260	154	414	1·	—
Insanity - - - - -	334	283	617	1·7	·1
Delirium Tremens - - -	578	195	773	2·1	·1
Headache, &c. - - -	1,803	188	1,991	5·5	·3
Inflammation of the Lungs and Pleura - - - -	9,767	4,297	14,054	38·5	2·3
Phthisis and Hæmoptysis -	3,672	1,729	5,401	14·8	·9
Influenza and Catarrh - -	21,883	259	22,142	60·7	3·7
Cynanche - - - -	6,263	147	6,410	17·6	1·1
Asthma - - - - -	104	129	233	·7	—
Functional and Organic Disease of the Heart - - -	3,116	1,489	4,605	12·6	·7
Hæmorrhoids - - -	773	143	916	2·5	·2
Varix - - - - -	274	116	390	1·1	—
Inflammation of the Stomach and Bowels - - -	373	162	535	1·5	·1
Dysentery - - - -	574	786	2,360	6·5	·4
Diarrhœa - - - -	10,526	359	10,885	30·3	1·8
Constipation and Colic - -	1,466	- -	1,466	4·	·2
Inflammation of the Liver -	728	192	920	2·6	·2
Jaundice - - - -	1,107	18	1,125	3·1	·2
Splenitis - - - -	143	45	188	·5	—

TABLE, No. 2.—Showing the Number of Days' Sickness from each Disease, &c.—*cont^d.*

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Inflammation of the Bladder and Kidneys	252	98	350	1·	—
Syphilis	26,927	9,205	36,132	98·9	6·
Gonorrhœa	3,544	387	3,931	10·8	·7
Orchitis	3,509	691	6,200	17·	1·
Stricture	1,365	863	2,228	6·1	·4
Incontinence of Urine, &c.	235	244	479	1·3	·1
Rheumatism	26,730	8,936	35,666	99·7	6·
Gout	46	- -	46	—	—
Disease of the Bones and Joints	1,201	533	1,734	4·7	·3
Ophthalmia	2,426	292	2,718	7·4	·4
Amaurosis and Cataract	169	129	298	·8	—
Otitis and Deafness	544	85	629	1·7	·1
Erysipelas	1,489	614	2,003	5·5	·3
Scrofula	353	200	553	1·5	·9
Bubo (*Symp.*)	7,194	727	7,921	21·4	1·2
Phlegmon and Abscess	51,236	2,026	53,262	145·9	8·7
Ulcer	40,004	4,111	44,115	120·9	7·2
Psora	1,395	42	1,437	3·9	·2
Eruptions, &c.	4,425	722	5,147	14·1	·4
Dyspepsia and Debility	4,651	1,317	5,968	16·4	1·
Scurvy	38	168	206	·6	—
Dropsy	452	311	763	2·1	·1
Worms	302	121	423	1·2	·1
Wounds and Injuries	52,383	4,077	56,460	154·7	7·3
Burns and Scalds	2,080	- -	2,080	5·6	·3
Hernia	425	51	476	1·3	·1
Poison	- -	73	73	—	—
TOTAL	320,749	53,713	374,462	1026·	61·8

TABLE, No. 3. - - - - - -

SHOWING the Number INVALIDED from each Ship - - - - -

CAUSE of INVALIDING.	Agamemnon.	Alacrity.	Algiers.	Amphion.	Argus.	Assurance.	Banshee.	Cæsar.	Cockatrice.	Cressy.	Doris.	Exmouth.	Firefly.	Foxhound.	Gannet.	Greyhound.	Growler.	Hannibal.
Continued and Remittent Fever	–	–	1	–	–	–	–	–	–	–	–	1	–	–	–	1	–	–
Intermittent Fever	1	–	–	2	–	–	–	–	–	–	–	–	–	–	–	1	–	–
Epilepsy	–	–	–	–	–	–	–	1	1	–	–	1	–	–	–	–	–	–
Paralysis	–	–	2	–	–	–	–	1	–	–	–	1	–	–	–	1	–	2
Insanity	1	–	2	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Delirium Tremens	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Neuralgia, &c.	1	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–
Inflammation of the Lungs and Pleura	–	–	1	1	–	–	–	–	–	–	1	5	1	1	–	–	–	2
Phthisis and Hæmoptysis	7	–	6	1	–	1	–	7	–	13	6	15	1	6	–	1	–	11
Cynanche and Tonsillaris	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–
Asthma	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Functional and Organic Disease of the Heart	1	2	4	2	–	–	–	6	–	3	1	12	–	3	–	–	–	4
Hæmorrhoids	–	–	1	2	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Varix	–	–	–	–	1	–	–	–	–	–	1	–	–	–	–	–	–	2
Inflammation of the Liver	1	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	1
Splenitis	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Inflammation of the Stomach and Bowels	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Dysentery	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
Diarrhœa	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Inflammation of the Bladder and Kidneys	–	–	–	–	1	–	–	–	–	–	–	1	–	–	–	–	–	–
Syphilis	–	–	–	–	3	–	–	–	1	–	2	–	–	–	2	–	–	2
Orchitis and Diseased Testicle	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Stricture	1	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1	1	1
Incontinence of Urine, &c.	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1
Rheumatism	8	–	3	4	1	–	1	5	–	–	2	3	–	1	–	–	–	5
Gout	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Disease of the Bones and Joints	–	–	–	–	1	–	1	1	–	1	1	2	–	1	–	–	–	–
Inflammation of the Eyes	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Amaurosis and Cataract	1	–	2	–	–	–	–	2	–	1	–	–	1	–	–	–	–	2
Otitis and Deafness	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–
Erysipelas	–	–	–	–	–	–	–	–	–	–	1	–	–	1	–	–	–	–
Scrofula	–	–	–	–	–	–	–	1	–	1	1	–	–	–	–	–	–	1
Phlegmon and Abscess	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Ulcer	1	–	–	–	–	–	–	–	–	1	–	7	–	–	–	1	–	2
Abdominal Tumor	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Eruptions	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–
Dyspepsia and Debility	2	–	1	2	–	–	–	3	1	–	–	2	–	–	–	–	–	1
Dropsy	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Wounds and Injuries	1	–	1	2	–	–	–	2	–	1	3	5	1	–	–	–	–	1
Burns and Scalds	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Hernia	1	1	2	2	1	–	–	–	–	–	1	–	–	1	–	–	–	2
TOTAL	29	3	26	20	8	1	2	29	3	23	22	57	5	15	2	7	1	45

- - - - - TABLE, No. 3.

- - - - - - employed on the MEDITERRANEAN Station.

Hibernia.	Intrepid.	James Watt.	Liffey.	London.	Marlborough.	Mars.	Medina.	Melpomene.	Neptune.	Orion.	Procris.	Queen.	Racoon.	Recruit.	Renown.	St. Jean d'Acre.	Scourge.	Scylla.	Surprise.	Terrible.	Trident.	Victor Emmanuel.	Wanderer.	Weser.	TOTAL.
2	–	1	–	1	1	1	–	–	2	–	–	2	2	–	–	–	–	–	–	–	–	–	–	–	15
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
–	–	2	4	1	–	–	1	1	2	1	–	3	–	–	–	–	–	–	–	–	–	–	–	–	18
–	–	1	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1	–	–	10
–	–	–	–	1	–	1	–	2	1	–	–	1	–	–	–	1	–	1	–	1	–	–	1	–	15
–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	1	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	4
–	–	–	–	3	2	2	–	–	–	1	1	–	–	–	–	1	1	–	–	1	–	–	–	–	24
–	–	15	2	8	7	4	1	2	12	1	–	8	1	–	6	36	1	1	–	8	–	7	–	1	196
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
–	1	6	4	8	2	1	1	1	4	4	–	1	–	–	1	5	–	1	–	–	–	2	1	–	81
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
–	–	1	–	2	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	3	–	2	–	–	13
–	–	2	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	1
–	–	1	–	–	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	9
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	2
–	1	1	–	1	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
–	–	4	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	3	–	–	20
–	–	1	–	–	1	–	–	–	–	3	–	1	–	–	–	–	–	–	–	1	–	–	–	–	8
–	1	2	4	1	–	–	–	–	1	1	–	3	–	–	–	–	–	1	–	1	–	–	–	–	20
–	–	–	–	–	–	–	–	–	–	–	–	4	–	–	–	–	–	–	–	–	–	–	–	–	6
–	1	4	4	1	2	7	–	–	7	3	–	6	1	–	3	–	1	–	–	3	–	4	–	–	80
–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	4	1	–	–	3	1	–	–	–	–	–	–	–	–	–	1	–	2	–	–	20
–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	2
–	–	1	1	3	–	–	–	1	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	18
–	–	1	–	–	–	1	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1	–	–	5
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
–	–	1	–	–	2	1	–	–	2	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	8
–	–	1	1	–	–	–	–	1	1	1	–	–	–	–	1	–	–	1	–	–	–	1	–	–	10
–	–	1	1	3	–	–	–	–	3	–	–	8	–	–	–	–	–	3	–	–	–	1	–	–	32
–	–	–	–	1	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	1	2	1	1	–	5	–	2	2	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	27
1	1	–	–	1	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	5
–	–	1	3	2	–	1	–	1	4	4	–	3	–	–	–	1	–	–	1	–	–	–	–	–	38
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	1
–	–	1	–	3	1	–	1	1	4	–	–	1	–	–	6	–	–	–	–	–	1	2	–	1	33
3	6	50	27	44	27	24	4	12	51	24	1	46	4	1	19	45	3	9	1	21	2	27	2	2	753

REFORM CLUB PALL MALL

TABLE, No. 4. - - - - - - - -

SHOWING the Number of DEATHS in each Ship - - - - - - -

CAUSE of DEATH.	Agamemnon.	Algiers.	Amphion.	Banshee.	Cæsar.	Cressy.	Doris.	Exmouth.	Firefly.	Greyhound.	Hannibal.	Hibernia.	Intrepid.	James Watt.
Continued and Remittent Fever -	–	1	2	–	–	1	–	2	–	–	1	–	–	–
Small-pox - - - - -	–	1	–	–	–	2	3	–	–	–	–	–	–	–
Inflammation of the Brain - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Apoplexy - - - - -	–	–	–	–	–	1	–	–	–	–	–	–	–	–
Delirium Tremens - - -	1	2	–	–	–	–	–	–	–	–	–	–	–	–
Coup de Soleil - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Inflammation of the Lungs and Pleura	–	–	–	1	2	–	–	–	–	–	–	–	1	–
Phthisis and Hæmoptysis - -	4	3	–	–	4	–	1	1	–	1	3	–	–	2
Laryngitis - - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Functional and Organic Disease of the Heart - - - -	–	1	1	–	–	–	–	–	–	–	1	2	–	–
Aneurism of the Abdominal Aorta -	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Inflammation of the Stomach and Bowels - - - - -	1	–	–	–	–	–	–	–	–	–	–	–	–	–
Dysentery - - - - -	–	–	–	–	–	–	–	1	–	–	–	–	–	–
Inflammation of the Liver - -	–	–	–	–	–	1	1	–	1	–	–	–	–	–
Inflammation of the Bladder and Kidneys - - - - -	–	–	–	–	–	–	–	–	–	–	–	–	1	–
Rheumatism - - - -	1	–	–	–	–	–	–	–	–	–	–	–	–	–
Disease of the Bones and Joints -	1	–	–	–	–	–	–	–	–	–	1	–	–	–
Erysipelas - - - - -	–	–	–	–	1	–	–	–	–	–	–	–	–	–
Pyæmia - - - - -	1	–	–	–	–	–	–	–	–	–	–	–	–	–
Phlegmon and Abscess - - -	–	–	–	–	–	1	–	–	–	–	–	–	–	2
Dyspepsia and Debility - -	–	–	–	–	–	–	–	–	–	–	1	–	–	–
Cancer - - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Wounds and Injuries - - -	–	–	–	–	–	–	1	3	–	–	–	–	–	2
Drowned - - - - -	–	–	–	–	–	–	–	–	–	–	1	–	–	–
Not stated - - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Poison - - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Hanged - - - - -	–	–	–	–	–	–	–	–	–	1	–	–	–	–
TOTAL - - -	9	8	3	1	7	6	6	7	1	2	8	2	2	8

- - - - - - Table, No. 4.

- - - - - - employed on the Mediterranean Station.

Liffey.	London.	Marlborough.	Mars.	Melpomene.	Neptune.	Orion.	Procris.	Queen.	Racoon.	Recruit.	Renown.	St. Jean d'Acre.	Scourge.	Scylla.	Terrible.	Victor Emmanuel.	Weser.	Total.
–	1	2	1	2	3	2	1	2	2	–	1	3	–	1	–	–	2	30
–	–	–	–	–	1	–	–	–	1	–	–	–	–	–	–	1	–	9
–	–	–	2	1	–	–	–	–	–	–	–	–	–	–	–	–	–	3
–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	1	–	–	3
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
1	–	3	1	–	–	–	–	–	–	–	1	–	–	–	–	–	–	10
1	1	4	2	–	2	–	1	2	–	–	–	–	–	–	2	2	–	36
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	1	1	–	–	–	–	–	1	–	–	–	–	–	8
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
–	–	–	–	–	1	1	–	1	–	–	1	–	–	–	–	–	–	5
1	–	2	–	–	–	–	–	–	–	–	–	–	2	–	–	–	1	7
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3
–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	3
–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	2
–	–	–	–	–	–	–	–	–	–	–	–	–		–	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3
–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
1	1	1	2	–	1	2	–	2	1	–	2	2	–	–	–	–	–	21
3	–	–	3	–	–	1	–	–	–	1	3	–	1	1	–	–	–	14
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
8	3	14	11	4	9	7	2	9	4	1	8	6	3	2	3	5	3	172

TABLE, No. 5.

SHOWING the Names of the SHIPS; the Average Complement and Mean Force of each SHIP; the Total Number of Cases; the Total Number of Days' Sickness on Board, and the Average Number of Men Daily Sick.

P. O. Paid off. C. Commissioned. S. C. Station changed. D. Returns defective.

NAME of SHIP.	Number of Guns, Horse Power, &c.	Period.	Average Complement.	Mean Force of each Ship.	Number of Cases.	Number of Days' Sickness on Board.	Average Number of Men Daily Sick.	Ratio per 1,000 of Mean Force of each Ship.	Number discharged to Hospital.
Agamemnon	79 Sc. - 600	year	820	820	1,049	16,623	45·5	55·5	29
Alacrity	4 Sc. - 200	year	85	85	165	1,055	2·9	34·1	11
Algiers	73 Sc. - 600	year	865	865	1,049	11,555	31·7	36·6	17
Amphion	26 Sc. - 300	year	340	340	655	7,969	21·8	64·1	10
Argus - P. O.	6 P. W. 300	6 mo.	160	80	156	1,563	4·3	53·8	8
Assurance - P. O.	4 Sc. - 200	11 mo.	90	85.	148	1,255	3·4	40·	7
Banshee	2 P. W. 350	year	70	70	127	1,580	4·3	61·4	7
Cæsar	76 Sc. - 400	year	800	800	561	10,244	28·1	35·1	44
Cockatrice - C.	2 Sc. - 60	6 mo.	40	20	36	238	·7	35·	7
Cressy - P. O.	68 Sc. - 400	4 mo.	720	240	792	10,915	29·9	124·6	101
Doris	30 Sc. - 800	year	470	470	683	12,736	34·9	74·3	33
Exmouth	76 Sc. - 400	year	800	800	1,991	21,208	58·1	72·6	66
Firefly	5 P. W. 220	year	85	85	100	1,176	3·2	37·6	3
Foxhound	4 Sc. - 200	year	85	85	189	2,699	7·4	87·1	18
Gannet	11 Sc. - 150	year	125	125	281	3,548	9·7	77·6	13
Greyhound - S. C.	17 Sc. - 200	9 mo.	160	120	266	3,082	8·4	70·	14
Hannibal - P. O.	89 Sc. - 450	year	860	860	1,092	11,690	32·	37·2	56
Hibernia	104 - -	year	250	250	338	4,973	13·6	54·4	13
Intrepid	6 Sc. - 350	year	105	105	176	2,072	5·7	54·3	7
James Watt	79 Sc. - 600	year	850	850	985	15,554	42·6	50·1	41
Lapwing	4 Sc. - 200	year	90	90	148	1,413	3·9	43·3	–
Liffey	39 Sc. - 600	year	560	560	426	8,070	22·1	39·5	47
London	78 Sc. - 500	year	810	810	1,174	15,352	42·1	52·	51
Marlborough	121 Sc. - 800	year	1,030	1,030	1,124	11,550	31·6	30·7	138
Mars	68 Sc. - 400	year	770	770	1,021	14,786	40·5	52·6	20
Medina	4 P. W. 312	year	85	85	157	1,103	3·	35·3	5
Melpomene - D.	35 Sc. - 600	8 mo.	565	380	750	10,062	27·6	72·6	14
Mohawk - P. O.	4 Sc. - 200	10 mo.	95	80	120	1,316	3·6	45·	8
Neptune	78 Sc. - 500	year	835	835	1,551	17,913	49·1	58·8	117
Orion - P. O.	79 Sc. - 600	10 mo.	815	680	1,049	11,464	31·4	46·2	24
Pelican - C.	17 Sc. - 200	3 mo.	170	45	58	590	1·6	35·6	7
Procris - C.	2 Sc. - 60	3 mo.	30	5	4	41	·1	20·	1
Quail - P. O.	1 Sc. - 60	3 mo.	35	10	5	59	·2	20·	–
Queen	74 Sc. - 500	year	820	820	1,885	21,306	58·4	71·2	70
Racoon	22 Sc. - 400	year	275	275	447	6,233	17·1	62·2	9
Recruit - P. O.	6 P. W. 160	9 mo.	55	40	148	1,030	2·8	70·	5
Renown - P. O.	81 Sc. - 800	9 mo.	820	615	1,133	14,403	39·5	64·2	53
St. Jean d'Acre, P. O.	81 Sc. - 600	8 mo.	910	610	1,283	12,216	33·5	54·9	78
Scourge	6 P. W. 420	year	170	170	293	3,077	8·4	49·4	27
Scylla	21 Sc. - 400	year	255	255	350	5,500	15·1	59·2	11
Surprise - C.	4 Sc. - 200	6 mo.	115	60	74	566	1·6	26·7	9
Terrible	21 P. W. 800	year	305	305	455	7,104	19·5	63·9	21
Trident - C.	3 P. W. 350	3 mo.	105	25	45	497	1·4	56·	4
Victor Emmanuel	79 Sc. - 600	year	840	840	1,058	13,778	37·7	44·9	30
Wanderer - C.	4 Sc. - 200	3 mo.	85	20	57	436	1·2	60·	11
Weser - C.	6 P. W. 160	6 mo.	60	30	103	1,340	3·7	123·3	5

TABLE, No. 6.

SHOWING the Number of CASES of all DISEASES and INJURIES in each Ship employed on the MEDITERRANEAN Station.

DISEASE OR INJURY.	Agamemnon.	Alacrity.	Algiers.	Amphion.	Argus.	Assurance.	Banshee.	Cæsar.	Cockatrice.	Cressy.	Doris.	Exmouth.	Firefly.	Foxhound.
Continued and Remittent Fever	10	11	57	33	-	10	10	31	1	7	83	30	6	24
Intermittent Fever	1	-	-	8	-	-	1	1	-	13	-	6	2	-
Small-pox	6	-	1	-	-	-	-	-	-	3	58	1	-	-
Scarlatina	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Measles	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inflammation of the Brain	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apoplexy	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Epilepsy	1	-	-	-	-	-	1	1	-	-	1	-	1	-
Insanity	1	-	2	-	-	-	-	-	-	-	-	-	-	-
Delirium Tremens	7	-	7	-	-	-	-	-	-	1	2	2	1	-
Paralysis	-	-	2	1	-	-	-	1	-	-	-	1	-	-
Headache, &c.	2	7	6	2	1	-	3	-	-	6	1	191	-	-
Inflammation of the Lungs and Pleura	13	3	25	6	6	-	4	4	2	94	12	41	5	2
Phthisis and Hæmoptysis	2	2	5	-	-	-	-	3	-	5	8	15	1	2
Catarrh	139	9	191	35	31	14	11	85	1	122	3	151	2	17
Cynanche	38	6	3	4	-	2	6	4	1	33	26	93	-	10
Asthma	-	-	-	2	-	-	-	-	-	-	-	-	-	-
Functional and Organic Disease of the Heart	6	2	5	4	-	-	-	6	-	-	3	11	-	3
Hæmorrhoids	3	-	1	2	-	1	-	2	-	1	1	1	-	-
Varix	-	-	-	-	-	-	-	-	-	-	4	-	1	-
Inflammation of the Stomach and Bowels	1	-	-	3	1	-	-	-	-	-	-	-	1	-
Dysentery	-	1	-	-	-	-	2	1	2	7	1	22	-	-
Diarrhœa	86	15	55	38	5	8	22	20	2	89	18	287	8	14
Constipation and Colic	1	1	22	25	2	-	7	-	2	9	1	31	3	3
Inflammation of the Liver	1	-	1	2	-	-	-	-	-	-	2	1	2	-
Jaundice	1	-	-	2	-	-	1	1	-	4	-	5	2	-
Splenitis	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inflammation of the Kidneys and Bladder	-	1	-	-	-	-	-	1	-	-	-	1	-	-
Syphilis	20	3	20	21	3	2	4	27	6	76	29	121	1	4
Gonorrhœa	6	-	3	11	2	9	-	6	1	5	5	22	1	-
Orchitis	6	-	13	4	4	2	-	6	1	10	10	20	-	1
Stricture	7	-	1	2	-	2	-	1	-	-	2	2	-	1
Incontinence of Urine, &c.	-	-	1	-	-	-	-	1	-	2	-	1	-	-
Rheumatism	42	23	48	65	18	13	4	42	3	43	30	181	1	23
Gout	1	-	2	-	-	-	-	-	-	-	-	-	-	-
Disease of the Bones and Joints	-	1	-	2	1	-	2	-	1	2	1	-	-	2
Inflammation of the Eyes	7	1	10	3	3	2	-	1	-	7	6	8	1	-
Amaurosis and Cataract	-	-	3	-	-	-	-	-	-	1	1	-	1	-
Otitis and Deafness	-	1	-	-	-	-	1	-	-	5	4	4	-	-
Erysipelas	3	-	6	1	-	1	-	15	-	1	1	2	-	2
Scrofula	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Bubo (*Symp.*)	11	1	25	4	1	1	-	-	1	5	15	21	2	2
Phlegmon and Abscess	305	34	294	192	28	52	21	132	4	96	131	257	22	30
Ulcer	64	5	68	31	5	3	3	63	1	22	92	39	6	8
Psora	-	-	27	-	-	-	-	3	-	5	-	23	-	-
Eruptions, &c.	1	3	3	1	-	1	-	19	-	13	6	-	1	-
Dyspepsia and Debility	38	4	11	41	18	7	4	5	1	17	1	9	2	10
Dropsy	-	1	6	-	-	1	-	-	-	-	-	1	-	-
Worms	-	-	-	1	-	-	-	-	-	-	-	1	-	-
Wounds and Injuries	213	27	117	94	26	16	20	77	4	85	118	383	27	28
Burns and Scalds	5	2	5	1	1	1	-	2	2	3	4	4	-	3
Hernia	1	1	3	4	-	-	-	-	-	-	3	1	-	-
Scurvy	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Poison	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Purpura	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	1,049	165	1,049	655	156	148	127	561	36	792	683	1,991	100	189

continued on p. 54.

TABLE, No. 6.—Showing the Number of Cases of all Diseases and Injuries - - - - -

continued from page 53.

DISEASE OR INJURY.	Gannet.	Greyhound.	Hannibal.	Hibernia.	Intrepid.	James Watt.	Lapwing.	Liffey.	London.	Marlborough.	Mars.	Medina.	Melpomene.	Mohawk.
Continued and Remittent Fever -	4	9	71	16	9	110	9	35	18	85	29	6	5	5
Intermittent Fever - - -	18	5	3	–	–	6	3	–	6	4	1	–	5	–
Small-pox - - - - -	1	–	–	2	–	–	–	13	–	2	2	–	–	–
Scarlatina - - - - -	–	–	–	–	–	–	–	–	2	–	–	–	–	–
Measles - - - - -	–	–	–	–	–	–	–	–	–	2	–	–	–	–
Inflammation of the Brain - -	–	–	–	–	–	–	–	–	–	–	1	–	–	–
Apoplexy - - - - -	–	–	–	–	–	–	–	1	–	–	–	–	–	–
Epilepsy - - - - -	–	–	–	–	–	3	–	5	1	1	1	2	–	–
Insanity - - - - -	–	–	–	–	–	–	–	–	1	–	3	–	1	–
Delirium Tremens - - -	–	–	2	1	–	19	–	2	–	4	8	–	–	–
Paralysis - - - - -	–	–	2	–	–	1	–	–	–	–	–	–	–	–
Headache, &c. - - - -	2	2	–	3	1	1	–	2	4	1	–	4	15	–
Inflammation of the Lungs and Pleura - - - - -	–	1	9	13	2	4	–	4	16	29	6	6	6	2
Phthisis and Hæmoptysis - -	–	2	1	1	–	9	–	1	6	14	2	1	2	–
Catarrh - - - - -	39	33	108	15	32	107	21	37	197	54	147	15	142	5
Cynanche - - - - -	2	16	26	12	1	33	3	13	77	51	15	–	19	–
Asthma - - - - -	–	–	1	–	–	–	–	–	1	–	2	–	–	–
Functional and Organic Disease of the Heart - - - -	–	–	2	5	1	7	2	11	8	4	2	1	1	–
Hæmorrhoids - - - -	–	–	2	1	–	1	–	3	6	–	–	1	1	–
Varix - - - - - -	–	–	–	–	–	2	–	–	4	1	–	–	–	–
Inflammation of the Stomach and Bowels - - - - -	–	–	–	–	–	2	1	–	1	–	a1	1	–	1
Dysentery - - - - -	–	1	4	1	–	–	1	3	1	8	–	1	1	2
Diarrhœa - - - - -	15	8	25	15	11	46	17	33	66	59	36	18	48	5
Constipation and Colic - -	5	4	8	6	4	7	1	9	9	14	5	6	42	–
Inflammation of the Liver - -	–	–	2	2	–	4	1	1	1	1	1	–	–	–
Jaundice - - - - -	–	2	3	–	–	6	–	–	18	2	4	–	1	–
Splenitis - - - - -	–	–	–	–	–	–	–	–	1	–	–	–	–	–
Inflammation of the Kidneys and Bladder - - - - -	–	–	2	–	–	6	–	–	b1	1	1	–	1	–
Syphilis - - - - -	4	10	59	23	7	69	1	23	47	114	27	1	12	14
Gonorrhœa - - - - -	4	2	7	6	1	–	–	2	12	20	6	1	11	1
Orchitis - - - - -	5	3	22	5	3	9	–	8	5	27	17	1	2	2
Stricture - - - - -	–	–	2	7	1	5	1	5	1	1	1	1	2	–
Incontinence of Urine, &c. - -	–	–	1	–	–	–	–	–	–	3	–	–	–	–
Rheumatism - - - - -	37	12	34	41	24	27	21	37	36	93	93	8	20	12
Gout - - - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Disease of the Bones and Joints -	–	–	–	2	1	–	–	–	–	22	1	–	1	–
Inflammation of the Eyes - -	–	1	5	6	1	16	1	1	6	6	–	2	2	–
Amaurosis and Cataract - -	–	1	2	–	–	1	–	–	2	–	–	–	1	–
Otitis and Deafness - - -	1	–	–	–	–	4	1	1	–	5	2	4	4	–
Erysipelas - - - - -	1	2	2	1	–	14	–	–	1	3	4	–	1	1
Scrofula - - - - -	–	–	2	3	–	1	–	–	–	1	–	–	–	–
Bubo (*Symp.*) - - - -	3	–	6	7	3	11	–	1	11	29	4	–	–	5
Phlegmon and Abscess - -	50	67	318	34	38	140	24	83	256	198	262	30	175	25
Ulcer - - - - - -	27	4	144	39	8	136	4	48	88	75	105	15	77	8
Psora - - - - - -	–	–	1	–	–	1	1	2	15	30	1	–	1	–
Eruptions, &c. - - - -	4	1	12	9	2	2	1	1	3	38	19	1	8	–
Dyspepsia and Debility - -	10	12	13	11	3	9	1	15	17	41	19	5	21	7
Dropsy - - - - - -	–	–	2	–	–	–	–	–	–	6	–	–	2	–
Worms - - - - - -	1	5	–	–	–	–	–	–	–	2	–	–	17	–
Wounds and Injuries - - -	47	63	174	50	22	163	29	108	221	185	186	24	92	22
Burns and Scalds - - - -	1	–	13	1	–	–	4	8	5	6	7	1	8	3
Hernia - - - - - -	–	–	2	–	–	3	–	–	3	2	–	1	1	–
Scurvy - - - - - -	–	–	–	–	1	–	–	–	–	–	–	–	1	–
Poison - - - - - -	–	–	–	–	–	–	–	1	–	–	–	–	1	–
Purpura - - - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL - - -	281	266	1,092	338	176	985	148	426	1,174	1,124	1,021	157	750	120

a Melæna. *b* Hæmatemesis.

- - - - - - - in each Ship on the Mediterranean Station—*continued.*

Neptune.	Orion.	Pelican.	Procris.	Quail.	Queen.	Racoon.	Recruit.	Renown.	St. Jean d'Acre.	Scourge.	Scylla.	Surprise.	Terrible.	Trident.	Victor Emmanuel.	Wanderer.	Weser.	TOTAL.
52	3	-	-	-	9	35	3	86	121	2	14	-	2	2	66	1	5	1,105
-	2	1	-	-	6	-	39	23	-	1	6	-	4	1	-	-	45	211
1	-	-	-	-	3	7	-	-	-	-	-	-	3	-	2	-	-	105
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	1	-	1	5
3	4	-	-	-	5	-	-	1	2	-	-	-	-	-	1	-	-	34
1	-	-	-	-	1	-	-	-	-	-	1	1	1	-	1	-	-	14
3	2	1	-	-	4	1	-	-	-	2	-	-	-	-	-	-	3	72
1	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	11
4	3	-	-	-	-	4	1	19	5	-	8	-	3	-	2	-	-	303
11	7	-	-	-	2	-	2	11	99	7	12	-	7	-	5	1	-	479
8	5	-	-	-	2	2	-	5	7	3	-	-	5	-	10	-	1	130
113	88	7	-	1	231	32	22	91	140	36	23	13	92	2	128	2	-	2,784
14	36	-	-	1	64	17	3	40	104	8	12	3	23	1	56	-	1	877
-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	8
8	25	1	-	-	6	2	-	2	11	2	4	-	1	-	5	1	-	152
11	3	1	-	-	-	2	-	3	4	-	-	-	1	-	10	1	-	63
-	-	-	-	-	3	-	-	2	1	-	-	-	4	-	-	-	-	22
[b]1	[b]1	-	-	-	-	1	-	1	-	-	-	-	1	-	-	1	1	20
4	2	-	-	-	-	-	1	-	3	8	-	-	-	-	-	-	2	79
92	91	3	-	-	127	13	7	70	82	31	33	6	44	6	23	9	6	1,712
4	25	1	-	-	16	5	-	6	26	-	6	-	2	1	7	3	-	329
-	4	-	1	-	-	1	-	-	-	3	-	-	-	-	1	-	-	32
5	-	-	-	-	1	2	-	8	1	-	-	1	-	-	7	1	-	78
-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	2
1	2	1	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	22
52	20	5	1	-	51	3	6	10	44	10	18	4	20	2	71	5	1	1,071
1	11	-	1	-	29	1	2	2	3	7	2	3	8	-	25	2	-	241
28	10	-	1	-	12	6	2	24	10	4	3	4	9	2	12	-	-	313
2	4	-	-	-	5	1	-	-	5	3	4	-	1	1	2	1	-	74
3	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	21
169	60	5	-	-	89	64	2	213	73	18	25	5	44	2	67	2	3	1,872
-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	4
12	-	-	-	-	-	-	-	5	1	3	2	-	3	-	3	-	-	68
9	22	-	-	-	9	4	3	8	12	1	2	1	3	-	6	-	3	179
-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	16
2	-	1	-	-	3	2	1	5	6	1	-	-	-	-	2	-	-	60
3	1	-	-	-	3	-	-	-	7	2	1	-	-	-	-	-	-	79
3	2	-	-	-	-	-	-	-	2	-	-	-	-	-	-	1	-	16
7	8	7	-	-	17	5	-	10	6	1	4	-	5	2	5	1	-	255
336	287	13	-	-	474	102	15	254	199	51	69	24	83	11	245	7	11	5,479
141	55	2	-	-	221	29	3	60	75	23	32	2	23	2	55	4	3	1,918
12	6	-	-	-	1	1	1	-	18	-	-	-	-	-	3	1	-	153
17	16	-	-	-	6	1	2	12	17	5	4	-	4	-	9	-	2	244
82	30	-	-	-	68	4	13	11	19	8	7	1	3	4	4	6	13	625
2	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	22
1	2	-	-	-	2	1	-	-	6	-	-	-	-	-	3	-	-	42
310	204	7	-	3	398	96	19	138	168	45	55	6	53	4	202	7	1	4,337
18	6	2	-	-	4	2	1	5	3	6	1	-	2	1	15	-	-	156
4	-	-	-	-	-	-	-	7	-	1	-	-	-	1	2	-	1	41
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2
1,551	1,049	58	4	5	1,885	447	148	1,133	1,283	293	350	74	455	45	1,058	57	103	25,946

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The naval force on the North American and West India Station in the year 1861 consisted of twenty-five vessels, with a mean strength corrected for time of 4,750 men. With the exception of two ships of the line, the Nile and St. George, and two first-class frigates, the Immortalité and Mersey, all the others were ships of the sixth rate, steam sloops, and gun vessels. The time included by the returns received from the several vessels, varied from three months to twelve. The greatest loss of service by disease and injury was in the Bulldog, the Firebrand, Spiteful, and Cygnet; the least, in the Valorous, Nile, and Jasper. The rate of sickness in the Terror, the floating battery stationed at Bermuda, is extremely low, but it appears that nearly all her sick were sent for treatment to the naval hospital; so that, in a sanitary point of view, she cannot be compared with the other vessels. The high rate of sickness in the Bulldog, the Firebrand, and Spiteful, is to be ascribed to the prevalence of yellow fever in the last two, and to fever and phlegmonous diseases in the third.

The number daily sick of fever was on an average about twenty-six, or at the rate of 5·5 per 1,000 of strength; the average sick of disease of the nervous system, of disease of the respiratory organs, of the bowels and liver, was extremely small, ranging from one to about three per 1,000; but from disease of the urinary and re-productive organs, it amounted to about six, of which about nine-tenths were referrible to venereal affections. The loss from rheumatism alone was equal to 3·3 per 1000, from boils and abscesses 8·4, and from wounds and injuries 11·0. The total number daily under treatment on board ship and in hospital was 287, or in the ratio of 60·4 per 1,000 of mean strength, a reduction on the preceding year of about 8 per 1,000.

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Fever.—The total number of cases of primary fever put on the sick books of the squadron amounted to 723, namely, 404 of the common endemic, or the remitting fever of the tropics, and 319 of yellow fever; of the former, three terminated in death, but of the latter 141, so that considerably more than a third of the cases were fatal; but there is reason to suppose that the number of cases, from the difficulty of distinguishing mild cases of the more fatal from the endemic, have been understated. The disease appeared in only eight vessels of the force, and from four of these it carried off 127 men.

The introduction or eruption of the fever in the Firebrand is thus detailed by the surgeon. She arrived on the station early in January, and was subsequently employed between Carthagena, St. Martha, and Port Royal, Jamaica, until the 22d of June, when she sailed for Halifax.

"During the months of April and May there were two slight cases of remittent fever, and several of intermittent and ephemeral; but on the 30th of May there was a severe case of remittent, which ended fatally at sea on the 6th of June.* The ship, as already stated, left Carthagena on the 3d of June for Port Royal, and on the passage, which occupied four days, there were two attacked with remittent, and two with ephemeral fever. On the 8th of June, in Port Royal Harbour, there was one case of intermittent, and one of remittent; on the 9th, one of an ephemeral character; on the 10th, one; on the 12th, one, both of a remittent type; but on the 13th, the day on which we left Port Royal, there were seven cases of the same nature.

"We were at sea from the 14th until the 17th, and during that time the attacks steadily increased. On the last-mentioned date the ship was anchored in the open sea, about a mile outside of Carthagena, and ventilated as well as possible. Up to the 17th the fever was only the common remittent, but in the majority of cases it was very severe, and during that night two assumed the yellow type. On the following morning the ship left for Port Royal, where she arrived on the 21st. During the passage the fever progressed; twelve cases became yellow, and six of these died on the 19th and 20th.

"When the ship anchored at Port Royal there were thirty-eight on the sick list with fever; twenty of the most severe were immediately sent to hospital, and the remainder in the afternoon. On the morning of the 22d two more cases occurred, when the ship sailed for Halifax, and during the remainder of the day five additional cases were added to the list. On the 23d there were three ephemeral,

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* This appears to have been the first case of the epidemic. The patient died on the sixth day of the disease; hence it may fairly be regarded as a case of yellow fever.

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ephemeral, and one yellow; on the 24th, three remittent, and two yellow; on the 25th, two remittent, and three yellow; on the 26th, three remittent, and six yellow; on the 27th, five remittent, and two yellow; on the 28th, when the ship was nearly in the latitude of Bermuda, the weather calm and sultry, there were four remittent, and six yellow; on the 29th, one ephemeral, seven remittent, and seven yellow; and on the 30th, nine were put on the sick list, with the usual symptoms."

In the same manner the attacks continued up to the 4th of July, when the ship anchored at Halifax. On the following day there were seventy-nine of the crew on the sick list with fever, who were all removed into the Pyramus Hulk.

On the 6th of July the remainder of the ship's company were landed in the dockyard, and quartered, the crew in a loft, and the officers in an empty house, and neither officers nor men returned to the ship until a fortnight had elapsed; but working parties continued to be employed on board until the 17th of August, when the whole ship's company re-embarked. From the time the ship arrived at Halifax up to the 16th of July, when the last case occurred, thirteen were placed on the sick list. The thermometer at the time ranged from about 80 to 83 degrees, a temperature high enough for the support and extension of the disease.

The total number of cases of yellow fever entered on the returns amounted to sixty-five, and the deaths to fifty-two—a mortality, if the number of cases were correctly stated, which would stamp this as one of the most deadly epidemics on record. But the difficulty of distinguishing cases of yellow fever, unless they prove fatal, from remitting fever, is very great; and as the co-existence of these fevers in the epidemic form is rare, we may fairly assume that the disease was the same throughout, and in that case there would be about 156 cases of yellow fever, which would reduce the mortality to about one in every three attacked. This agrees with the usual death rate in all previous epidemics.

The surgeon states that he had no doubt "the disease was caused by malarious emanations from the neighbourhood of Carthagena." He considered it to be infectious. The assistant surgeon also thought the fever to be highly infectious within the ship, as shown by the following extract: "On our return to Port Royal, Jamaica, on the 7th of June, nine hands were sent on board, none of whom had been exposed to malaria at Carthagena, yet only one of these men escaped. All the nurses were attacked."

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The fever which prevailed in the Jason appears to have been contracted while the vessel lay alongside a coal hulk at the Havanna. It was prevalent in the town, and amongst the crews of the ships in harbour.

In a special report the surgeon states, " We returned to the Havanna on the 16th of July, and remained till the 23d, taking in a supply of coals. Several cases of fever occurred about this time, but there was nothing to justify us in running from the station, though there was one case of a very suspicious character. This man was placed on the sick list on the 13th of July with the symptoms of yellow fever; but during the progress of the disease there were sometimes faint remissions, which I had not usually observed in severe cases of yellow fever; though the eyes and skin became yellow enough, he eventually recovered." As the febrile symptoms in this case lasted for eleven or twelve days, it is doubtful whether it was yellow fever, even though the eyes became yellow. The ship arrived at Sacrificios on the 30th, and on the following day another case occurred: unquestionably this was yellow fever. On the 2d of August she left Sacrificios, and arrived at Tampico on the 3d, and remained at anchor off the bar of the river until the 8th; meanwhile the fever was making steady progress, and on that day the first death took place. On the 10th there were ten cases on the sick list, two of which died on the 12th; as the attacks increased, the ship at once sailed for Halifax, where she arrived on the 2d of September, having lost ten men additional on the passage." In about eighty cases which occurred in this vessel, nineteen terminated in death, or one in about every four attacked.

The surgeon alludes to an offensive effluvium which existed in the ship, and which he says " increased as we got into lower latitudes, and continued in greater or less intensity until the vessel was cleared out at Halifax after the epidemic; when pumped out, the water escaping from the hose over the ship's side was often so fœtid as to rouse the officers from their slumbers to close the scuttles in their cabins to exclude the smell; to all appearance the bilges were kept free from filth, but water was often allowed to accumulate in them to the depth of from eleven to seventeen inches before it was pumped out; consequently it found its way up the limber holes, and returned in the shape of a black fetid fluid. Some conjectured that during the building of the ship, chips of wood and dirt had been left between the lining and the ship's side, between which and the water

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a process of decomposition went on as indicated by the fetid fluid escaping from the limber holes. Others asserted that the ship was built of green unseasoned wood, and that the high temperature of the climate acting on it would cause the evolution of a noxious effluvium even if the bilges were kept dry."

In a report sent to the Commander in Chief, the captain of the ship also mentions this smell. He states that he did "not consider the fever was introduced into the ship by any person from the shore, or other ships, who had been suffering from fever; but I do think it was originally introduced during our stay at Havanna between the 10th and 23d of July." The report goes on to say,—

"With reference to any particular circumstances connected with the outbreak, I consider the ship has by no means been a healthy one. Our sick list has been large, in some degree caused, I think, by the want of protection from wet: while the watch are on deck at sea in rainy weather, there is not one square inch dry on the upper deck, consequently there is nothing but the damp or wet planks to lie on, a practice which it is extremely difficult to prevent at night; again, at times there is a very offensive smell in the after-part of the ship; this is not caused by steaming, for during the entire voyage from England to Bermuda I did not resort to that aid; still, in spite of the bilge being perfectly clean, it was highly offensive, causing the officers, on many occasions, to run on deck to avoid it. At the present moment the after parts of the ship are entirely cleared out. No dirt was found; the bilges are clear and clean, but still the smell is as offensive at times as ever. These causes may have tended to make the ship unhealthy; but actual fever, though of a mild kind, was first introduced, and reported to me at Havanna on the 22d of July."

The surgeon of the Barracouta mentions in his journal that—

"Havanna in July was rather unhealthy during our stay (three days), so far as fever was concerned. The number of cases of yellow fever occurring daily in the Spanish Naval and Military Hospitals, vary from thirty to forty, and the number landed from the Spanish frigate, which we were close to, averaged six, in conseqence of which, the captain left sooner than he intended. I think there cannot be a doubt but that it was there that we contracted the disease, more especially as it first attacked a gentleman who came on board for a passage, and the officers of the ship, who had been much on shore.

"The first case occurred two days after we left Havanna (the 11th of July), and the day before we left St. Felipe Cays (14th), the second case, that of the second lieutenant of the ship, occurred; the third, that of an ordinary seaman, took place on the 15th; the fourth, the paymaster, and the fifth a first-class boy, both on the 16th;

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16th; the sixth, that of a first-class boy, and the seventh, a midshipman, both on the 17th, the last we had for twenty-three days, and eight days after our arrival at Port Royal, where, on the 9th of August, the assistant paymaster was entered on the list suffering from the same disease. There are one or two things in the last case worthy of attention: first, the length of time it occurred after the former one, and after our arrival at Jamaica, where there was no fever, excepting those we sent to the hospital, and those that belonged to Her Majesty's Ship Firebrand; medical officers only were allowed to visit the hospital. Secondly, the fact that the patient kept late hours on shore for a week before he complained: thirdly, his having been employed for two days previously in arranging papers, clothes, &c. belonging to, and in the late paymaster's cabin, which, although it had been cleaned and purified with chloride of zinc after his death, had not been cleared out; now that, I think, gives rise to the question, did he, or did he not, contract the disease while so employed, or was it dormant in the system during the twenty-three days? The reason of his not being sent to hospital immediately was, that up to the night of the 10th no very marked symptoms had appeared, and the 11th was so very wet and boisterous, that I did not think it advisable to send him, particularly as he was in a cot under an awning on the after part of the upper deck. Black vomit had not made its appearance at the time of his discharge to the hospital, nor did it for several hours after his admission. He was cheerful and hopeful up to an hour before his death.

" The next and ninth case took place on the 14th of August. It was that of the captain's coxswain, a man 42 years of age, and who had been employed during our stay at Port Royal in going up to Kingston almost daily to attend on the captain. The symptoms in this case were light up to the time of his removal to hospital, which was two days after he first complained, and where he remained when the ship sailed for Mariguana, Bermuda and Halifax."

Of the eleven cases which occurred in the Barracouta, six terminated in death. The surgeon has not given his opinion with reference to the origin or cause of the fever.

The captain of the Barracouta, in reply to written questions from the Commander in Chief, states—

" 1st. That the fever broke out at sea on the 14th of July 1861.

" 2d. That it was probably introduced at Havanna, where, however, we did not coal, by communicating with the shore, inasmuch as it seemed principally to attack the officers and one of the boys who had been away in the Dingey; nevertheless, two cases occurred in men who had never been out of the ship.

" 3d. It broke out on the third day after leaving Havanna, where the ship had remained three days and a few hours. After arriving at Jamaica, the assistant paymaster was attacked, although there had not been a case for nearly three weeks, and Port Royal and Kingston were free from all fever at the time. This officer had been

been busily employed arranging the late paymaster's clothes, papers, &c., who had died of yellow fever at sea on July the 20th; but as the senior lieutenant was also engaged in the same proceeding, and escaped, it is difficult to say whether infection had anything to do with the assistant paymaster's attack.

"My opinion is, that the heat and the filthy state of the harbour of Havanna (at certain seasons only), must inevitably produce yellow fever amongst the crew of any man-of-war remaining there for more than three or four hours."

The fever was also contracted by the crew of the Spiteful at Havanna. During April and May she was employed between Jamaica and Belize, off the Mosquito Coast, and from the 8th to the 29th of June at anchor off the Grand Cayman. Part of the crew were sent on shore here for several days to cut wood for fuel. While thus employed, they were allowed quinine and an extra ration of rum. No disease of any kind followed which could be ascribed either to the exposure or to the green wood brought on board. The ship anchored at Port Royal, Jamaica, on the 1st of July. With the exception of a few patients in the Naval Hospital who were convalescing from yellow fever, the disease did not exist amongst the civil population, and the hospital had been in quarantine. The weather was fine, and some of the crew were allowed to go on shore. On the 13th she sailed from Port Royal, and anchored in the Havanna on the 17th. Up to the latter date the crew had been in good health; but on the 23d a stoker was placed on the sick list with symptoms of fever, which rapidly assumed those of the yellow type. On the 25th, other two cases were placed on the sick list, and from this date the attacks became more numerous. On the 26th she sailed, and anchored at Key West on the following day, where she remained two days only, and arrived at Nassau on the 31st of the month.

Most of the cases up to the 9th of August were sent on shore to the Quarantine Hospital at Nassau, and three officers were sent to private lodgings. "Most of the constant attendants on the sick at Nassau were seized with the disease." On the 9th the vessel sailed for Halifax, where she arrived on the 16th. Nineteen cases were immediately sent to the Pyramus Hulk, and on the following day the remainder of the ship's company took up their abode in a loft in the dockyard. A few cases occurred afterwards.

The tanks, stores, and other furniture or provisions, were removed on shore, with the view of clearing and cleansing the holds; but very little dirt was found in them. They were afterwards

afterwards fumigated with nitrous and chlorine gases, on which the hatches were closed for two days.

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The cases in the Spiteful amounted to eighty-nine, of which thirty-seven terminated in death. The mortality was therefore in the proportion of one in about every two-and-a-half attacked, or two in five, which exceeds the death-rate in the Jason.

The surgeon in this instance ascribed the eruption of the fever "to the filthy polluted state of the water in the harbour of Havanna, and to the peculiar state of the climate, which makes Havanna a constant source of fever, persons arriving from a colder climate being more liable to the disease."

The captain, in reply to certain queries sent to him by the Admiral, ascribes the origin of the disease to the same cause or causes as the surgeon. He also thought the ship's company "may have been predisposed to fever, having been previously employed at Belize, and off the coast of Honduras, where the boats' crews, while watering, were necessarily exposed to the weather." At the same time he felt convinced "that during certain months of the year the harbour of Havanna becomes so exceedingly unhealthy and pestilential, that no vessel can remain there more than a few hours with any reasonable hope of escaping fever." He further states that the holds were very clean and dry; the lower deck was scrubbed once a week, besides being damped with hot water, and scraped each morning.

The surgeon of the Mersey mentions that that ship left Vera Cruz on the 11th, and arrived at Havanna on the 22d of September, where she remained twenty-seven hours. The weather had been fine, but there were thunder-storms on two nights successively. From the Spanish authorities they learnt that yellow fever had ceased to prevail; but he says "it is notorious that these people always endeavour to conceal the real state of things; they are unwilling to admit the appearance of an epidemic, and antedate its cessation, in order that the interruption to commercial intercourse may be as short as possible. The consul stated that the disease still continued, and this was confirmed by an apothecary from whom I made some purchases. The officers and mess-servants went on leave, and on duty both days, and some of them remained to a late hour at night." The ship left on the 23d September, and arrived at Key West, off the coast of Florida, on the morning of the 24th September; "the place was reputed to be healthy, and free from yellow fever."

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On the 28th two cases were placed under treatment, which proved to be yellow fever, and both terminated in death. One of the patients had been confined to his hammock for about sixteen days previously, with a wound of the ankle, which had shown a disposition to slough; but in neither case had the men been on shore. Whether they were both cases of true yellow fever may be doubted. In one, the patient who had been previously on the sick list, the symptoms, with the exception of yellow suffusion of the eyes and skin, were more like effusion on the brain. It was accompanied with obstinate constipation until within a day of the fatal issue. The other case, with the exception of black vomit, presented all the characteristic symptoms of yellow fever, though the patient lingered until the thirteenth day. Yellow fever generally destroys its victim in less than half the time. On the 3d of October the ship left Key West for Halifax, where she arrived on the 14th. A few cases of fever occurred during the passage, but they were of a trivial character.

The Racer arrived at Nassau from Halifax on the 4th July, remained there for one day, and then proceeded to Havanna, which she reached on the 13th, remaining there for two days. The crew was then in good health; " the men were partially employed coaling ship under an awning, and slaves were engaged to carry coal from the shore to the ship, which was lashed alongside a wharf. The ship was effectually protected from the sun by awnings, and the crew were not employed aloft, so that there was no exposure of any kind to the common causes which generally produce fever. The only men who were in reality exposed to the direct causes of fever, were those employed in the boats which took the officers and the stewards of the several messes on shore; and when the outbreak of this dire calamity occurred, attention was not called particularly by the circumstance that those men were especially its victims, but that all were attacked promiscuously, according to predisposition. It must be kept in mind that the period of incubation (with the exception of the midshipman) comprised twenty-seven days, if the germs of this fever were laid on our first visit, a subject worthy of inquiry by those who have had extensive opportunities of studying the phenomena of this fever. Having left Havanna on the 15th of July 1861, we proceeded along the coast of the Confederate States. The weather was fine until our arrival off Cape Fear, where a thunder-storm took place, and ended in a perfect gale, the wind blowing from N.E. On

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On arriving at this Cape, the ship's head was directed to the southward, our destination being Nassau, which we reached on the 31st of July. On the previous day the first case of yellow fever appeared in a master's assistant, age sixteen, who had complained of headache and general weakness on the evening of the 29th, for which he had medicine, and felt uncomfortable towards morning, but sadly complained of great lassitude. His stomach was quiescent until next afternoon, when it became extremely irritable; his skin was hot and dry, and his tongue covered with a white fur.

"On the same date another case occurred in a midshipman, aged nineteen, who presented symptoms similar to the above, but there was no vomiting at the commencement; there was, however, intense headache, with redness of the conjunctivæ. On the following morning another midshipman, aged eighteen, presented himself, suffering under similar feelings, and general lassitude. His eyes were suffused deeply, and there was pain in the eyeballs. This patient from the beginning remained in a quiet state, but when spoken to suddenly started, though he soon fell back again to his former soporose condition, his general appearance suggesting the idea that his system was affected by the action of some specific poison. From the general symptoms so definitely and clearly displayed in this patient, I began to feel that there was not the slightest cause for doubt but that the disease was true yellow fever, and that the others were of the same type, though the symptoms were less characteristic."

These were indeed true cases of yellow fever; in about four days from the date of the attack, two had terminated in death. According to a report made by the medical officers of the Nile, all these young gentlemen had been on shore, on leave, at Havanna. One died on the 3d and the other on the 4th of August. The ship again returned to the Havanna on the 8th of August, but only remained from 6 a.m. till noon. She then went outside, and for some time continued cruizing off the entrance to the harbour. The next case occurred on the 9th; then there were four on the 11th, one on the 12th, three on the 13th, and eleven on the 14th. On the latter date, after communicating with the Mersey, the ship sailed for Nassau, for some purpose. On the 15th there were six cases, on the 16th one, on the 17th seven, on the 18th one, on the 19th one. On that day she reached Nassau, and on the following sailed for Halifax. No other attack occurred until the 23d; but up to this date, in a little more than three weeks, fourteen cases had ended in death;

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it is, therefore, little to be wondered at that she ran for Halifax, which she reached on the 3d of September. During the passage, nineteen additional cases were put on the sick list, and seven died. The sick were sent on shore to sick quarters, the ship was put in quarantine, and the remaining part of the crew were quartered in a loft in the dockyard, the officers taking up their abode in a house hard by. "On the 4th of September three cases occurred, which were sent on shore to sick quarters. After this there were no more attacks until the 14th of September, when an able seaman, who returned from four days' leave, was seized with the usual symptoms, and he was sent to sick quarters, where he died on the fifth day from his attack, with black vomit. It will be observed that the peculiarity in this case is the interval which elapsed from the last date of seizure, on the 4th of September, up to the 14th (ten days), the man all this time having been either on shore or in a well-ventilated room or loft, where the rest of the ship's company resided." The total number of cases placed on the sick list amounted to sixty-one, twenty of which terminated in death. With regard to the cause or origin of this malady, the surgeon states that he had come to the conclusion "that it was introduced into the ship at the Havanna, where it was raging as an epidemic at the time of the Racer's visit, not only at the Havanna, but all over Cuba." He further states, "that, in the months of July, August, and September, the water of this harbour remains almost in a stagnant state, from the low tides which prevail at that season; consequently, there is no outlet for the accumulated filth which runs from the town, and, as occurs in the other parts of the year, when the tides rise to many feet, and at ebb carry out into the ocean all the debris which in the hot season, from its quiescent state, becomes the hotbed of this malignant and virulent malady. To add still to the malaria of this harbour, there are ferryboats which ply every half-hour in the day over its waters, and, in my opinion, stir up the dormant germs, and contribute largely to the usual exhalations which escape from natural causes, productive of this fever."

In answer to queries propounded by the Commander-in-Chief, the captain made the following answers: "In my opinion, and also in that of the surgeon, the fever, without doubt, was introduced into the ship at Havanna;" but "I do not think it was introduced into the ship by any person from the shore, or other ship, who had been suffering from the fever." "No leave was given to any of the ship's company at Havanna, and, since I took command, great attention

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tion and care have been paid to the cleaning of the bilge, &c., and there has never been, at any time, the slightest smell in the ship." "The Racer arrived on the station in 1859, and up to the time of the outbreak of the late fever she was singularly healthy. Since I joined this ship in July last year, there has been less sickness in her than in any vessel in which I had previously served, or ever fallen in with."

On the same subject the surgeon makes the following observations: "From the time the Racer arrived on this station, in April 1859, up to the outbreak of this fever, she was singularly healthy, as my returns, with one exception, have shown, and that was when she visited Corn Island, in 1859, when the men had leave, and were permitted to remain on shore all night. The consequence was, that those who did not return to the appointed time were known to be in a state of intoxication during the whole period of the ship's visit (two days). They slept in the bush at night, and roamed about in the sun all day." It does not appear, however, that any of the men were attacked with yellow fever in consequence of these imprudencies.

The Rinaldo, a new vessel of seventeen guns, left England on the 28th of June, touched at Madeira on the 7th of July, and arrived at Halifax on the 28th of that month. On account of some alterations that were required on board, the ship's company were transferred to the Pyramus hulk, which had some time previously been employed as a hospital for the yellow fever patients of the Firebrand. Three weeks had, however, elapsed since the last convalescents had left the hulk, and in the meanwhile she had been thoroughly cleaned, so that no risk of infection was apprehended. The following statement of the surgeon details the appearance of yellow fever in that ship:—

"The most important occurrence was the appearance of three cases of yellow fever, which showed themselves a few days after the ship left Halifax, on her arrival at New York. As this outbreak was altogether an unusual one, uninfluenced by climatic agency, and originating in a healthy harbour, having a moderate temperature, it demands special notice. On the 16th of August, Her Majesty's ship Spiteful arrived at Halifax, from the Havanna, with upwards of thirty-five cases of yellow fever in various stages on board, and having had eleven deaths on her passage. At this time the crew of the Rinaldo were temporarily berthed in the Pyramus hulk. Three weeks previous to their going on board she had been used as a hospital ship for cases of yellow fever belonging to Her Majesty's ship Firebrand; but, as she had been in the interim thoroughly cleansed,

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cleansed; there was no fear of any infection remaining. It was directed that the Rinaldo's people should at once leave the hulk, return to their ship, and that the Pyramus should be used as a hospital for the worst of the Spiteful's cases. This was effected without any communication between the crews of the respective ships. The convalescent cases of the Spiteful were sent on shore to the temporary hospital at Halifax, and the remainder of the ship's company landed and lodged in the loft of the dockyard. The Pyramus was kept in strict quarantine. After the Spiteful's crew were landed in the dockyard, it was impossible to prevent communication between them and the crews of boats or working parties from other ships, and, to a certain extent, between the convalescents sent to the temporary hospital, and other patients belonging to the ships at Halifax. The Rinaldo left Halifax on the 23d of August, and on the 27th of that month, when off New York, a boy appeared with the usual symptoms of a severe febrile attack. The next day a stoker was added to the sick list, with the same symptoms, and on the 29th another stoker. From the severity of the febrile symptoms in the first case, and the other cases so rapidly following, suspicion was at once aroused, and the patients were isolated from the ship's company as much as it was possible in a small vessel. The fever soon evinced its true type, and assumed its usual malignant form. The boy died on the fourth day, and the stoker, who was last seized, on the third day of the attack. The remaining case was not so severe, although of the same type: he is now convalescent. There is little or no doubt but that these cases of fever originated by infection, or some communication with the crew or convalescents of the Spiteful since the affection has never been known to arise spontaneously. The boy who was the first attacked belonged to the Dingey, and was constantly employed going to and fro between the ships and the dockyard. The second case (now convalescent) which appeared, was a man employed in the dockyard; but he denies having had any communication with the Spiteful's people: little dependence, however, can be placed on his statement. The third case, which proved fatal, was a stoker, who, for gonorrhœa and general debility, had been sent to the temporary hospital, where he remained until the day previous to the ship's sailing; so it is highly probable he contracted the infection there. This outbreak of fever appears an unusual one, and, allowing the disease was contracted by slight communication with the Spiteful's people, is contrary to generally admitted views—that it may be transmitted by infection in a healthy harbour, and with a moderate temperature, the thermometer at the time never rising above 74; and it tends to prove the highly insidious and infectious nature of the fever."

Eight or nine cases of yellow fever occurred in the Challenger in December, at Havanna. The two first persons attacked had not been out of the ship, having for some time previously been on the sick list; the ship, however, had been alongside the coal wharf, a notoriously unhealthy place, taking in coals: she went to sea, and continued cruising outside

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outside of the harbour, where the fever gradually disappeared: three cases ended in death. No opinion is offered by the surgeon as to the supposed cause or origin of these cases.

The Commander in Chief having called upon the medical officers of the Nile, the vessel carrying his flag, for a report upon the yellow fever cases of the Firebrand, Spiteful, Jason, and Racer, the following are the conclusions at which they arrived with regard to the origin and spread of the disease:—

"Little doubt can be entertained that the Firebrand contracted the yellow fever whilst lying at Carthagena, though at first it was not recognised. The Spiteful and Racer as certainly contracted the fever at Havanna, where it prevailed very extensively; and no reasonable doubt can exist that the Jason's outbreak can be traced to her visit to the same place. There is no positive evidence that the disease was introduced into any of the vessels by direct contagion. It apparently arose from exposure to that combination of endemic causes which originated the disease in the particular locality at the time. Once having attacked a ship, its continuance and spread may be attributed to its localisation, without the necessity in every instance of inferring direct contagion; although the cases of the Firebrand and Spiteful, in which every attendant on the sick, with (we believe) only one exception, took the fever, may appear to favour the latter view."

Such is the history of the outbreak of yellow fever in these ships. The cases occurring in the Rinaldo, few though they be, are a very valuable addition to the numerous records which already exist, demonstrating the infectious nature of this fearful disease. We have here an instance of a ship direct from England, touching only at Madeira on the way, arriving in a harbour in a temperate region, the climate of which is looked upon as the antidote to which yellow fever-stricken ships fly. While there, a ship arrives with many yellow fever cases on board. Every precaution that can possibly be taken to prevent communication with the infected ship is adopted; but, from the nature and exigencies of the service, this cannot be done effectually: working parties from the two ships meet in the dockyard, and the sick in hospital with ordinary complaints are brought into contact with convalescents from yellow fever. The result is, that a boy, one of the Dingey's crew, in constant communication with the shore, and mixing freely, doubtless, with the working parties from the infected ship—a man whose work was altogether in the dockyard, and who, although he denies having had any communication with the Spiteful's men, was placed in such circumstances as to render it more than improbable that he had not some intercourse with them— and

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and another man who had been a patient in hospital, and had only been brought on board his own ship on the day of her sailing for New York—are stricken down with undoubted yellow fever, and of these three two die, one on the third and the other on the fourth day of the attack. Would these cases have occurred had not yellow fever been imported into Halifax? Reason and experience are alike opposed to such a supposition. That the disease did not spread amongst the ship's company is probably entirely attributable to the temperate climate of the locality in which it made its appearance.

The difficulty of tracing epidemics to their source is frequently very great; and, singular to say, on board ship it appears to be particularly so. Even when epidemics of such diseases as small-pox, scarlatina and measles make their appearance, the source from which the first case derived the infection can, in a large number of cases, only be inferred. Sailors, as a race, are so thoughtless, that even if they were disposed to give evidence as to where they had passed their period of leave on shore, it is very questionable whether they could accurately do so. Their tendencies are, however, to give a direct denial to any thing which they think may implicate themselves; and, viewing all questions of this nature with suspicion, even when the object of the inquiry is fully explained to them, they will often so withhold or vitiate their evidence as to render it utterly valueless. It may be accepted, however, as a general rule, that the haunts of the seamen on leave are those very localities in which pestilential diseases most frequently abound; and to these sources, therefore, in default of other evidence, epidemics of the exanthemata on board ship are commonly, and with justice, referred

When such difficulties are met with in tracing the source of diseases familiar to every one, and which, in the majority of cases, are marked by features easily recognisable, it will not be a matter of surprise that the difficulties will be much increased in tracing such a disease as yellow fever, which need not present any other appearance than that of the most ordinary febrile seizure, and which may be closely simulated by another form of fever not so fatal in its nature, and not capable of being conveyed by infection from one person to another. In the history of the epidemics on board these ships we have an instance of this difficulty. In the case of the Firebrand, that ship had for fifty-eight days been lying in the inner anchorage at Carthagena, where leave had been given, and daily communication was had with the shore.

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shore. Fever, it was stated by the inhabitants, did not exist in the place, and had not for seven years. This statement may be taken for what it is worth; to an inquirer desiring accuracy it will be of little value.

The surgeon of the Firebrand states it as his opinion that the disease was contracted at Carthagena; on this point he has no doubt; but he says it was occasioned by malarious emanations from the neighbourhood of Carthagena. Malarious emanations, however, do not give rise to specific yellow fever. A reference to the state of the squadron on the west coast of Africa, in this Report, will afford abundant evidence to this effect. There, in the River Lagos, large numbers of men were exposed to the most virulent operation of malaria under a burning sun, and with the accompaniment of great fatigue; but yellow fever was not the disease which visited them, nor has it ever appeared in that river. Yellow fever may exist in localities where there are no marshes whatever, and, on the other hand, marshes may abound where yellow fever has never been known. There is abundant evidence in the history of the epidemic in the Firebrand to show that she contracted the disease at Carthagena, and that for some time, on account of the somewhat obscure nature of the symptoms, it was not recognised. Having been brought on board, however, it spread by infection amongst the ship's company according to their different degrees of susceptibility.

In the month of July yellow fever was raging as an epidemic, not only in Havanna, but all over the Island of Cuba. During this month the harbour was visited by the Jason, the Barracouta, the Spiteful, and the Racer, all of which ships contracted the disease. The Mersey contracted the disease there in September, and the Challenger in December. It is not necessary to look to the offensive state of the harbour, or the smell of bilge-water on board ship as a cause for so specific a disease as yellow fever, when that disease was prevailing with such severity on shore. Even with the utmost care, it is impossible to prevent a large amount of communication between ships' companies and the shore when ships are lying in harbour. Bumboats, washerwomen, the slaves employed in coaling, all form means of communication between the ships and the very localities on shore where the disease is likely to be most prevalent; and to these there may be added the daily communication on the part of officers, mess servants, and the crews of the boats employed to convey them on shore.

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Small-pox.—There were eight cases of small-pox in the Squadron; but three of these, returned by the St. George, were contracted at Portsmouth previous to the ship leaving for the North American and West India Station. The cases occurring in the Gladiator, Hydra, Mersey, and Nile, were contracted at Halifax, where the disease was prevailing epidemically.

In three cases the marks of previous vaccination were very good; in one there was no vaccination mark on either arm. In four cases no mention is made as to whether the men had been previously vaccinated or not. Two of these cases occurred in coloured men.

Scarlatina.—A fatal case is returned under this head. The patient, an ordinary seaman of Her Majesty's ship Nile, was, with the exception of glandular swellings of the neck, convalescing most favourably, and on the day of his death was reproved by the surgeon for "skylarking" noisily in the wards of the temporary hospital at Halifax, where he was under treatment. "After supper he filled his pipe, and went out to smoke; when he returned he took a drink of water; he immediately appeared to be choking, and ran out into the lobby to the sick-bay man, who met him, and took him back to his bed, on which he expired in a minute or two."

On post-mortem examination the appearances were "extensive enlargement and induration of right cervical glands, and of glands on both sides of the trachea. There was much solid œdema of the glottis; the epiglottis would not close; left side of larynx inside tumid, white and gristly: a good deal of frothy mucous in the larynx. No engorgement of lungs, nor fluid in the chest."

The surgeon remarks on this case, "The most noteworthy point was the obscurity, the latency of the mischief in the larynx. No dyspnœa occurred; not the least difficulty of breathing, and not the least change of voice was observed up to three or four hours before death by myself (and not at all to the last by any other person), when I last saw the man, and had had occasion to admonish him to be more quiet in the ward, in which I found him skylarking and noisy."

Disease of the Brain and Nervous System.—A marine of Her Majesty's ship Firebrand, who had suffered severely from tertiary syphilis, and was under treatment for hepatalgia, began to exhibit symptoms of mental derangement.

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ment. Paralysis, with tendency to coma, soon set in, and he died eight days after the first head symptoms made their appearance. On post-mortem examination, the following appearances were found: "The membranes of the brain were highly injected, and on the anterior lobe of left hemisphere two spots of pus were found between the membranes. There was a very large amount of effusion in the middle and posterior fossæ. In the left hemisphere there was nothing to account for death. On opening the lateral ventricle of the right side, the corpus striatum was found to be much degenerated, and on the slightest touch of the knife broke down into a substance like pus. The grey substance of the brain on this side, and under the corpus striatum, was much degenerated and broken up to the extent of one-eighth of an inch. The pituitary gland on being touched with the point of the knife ejected a small quantity of pus. The base of the brain was healthy. Near the apex of the Basilar process on the right side, the membrane covering the space of bone between the notch for the fifth nerve and the foramen ovale, was inflamed, and strongly adherent around a carious portion of bone, about half an inch in diameter, and on being detached and examined, had a rough and granular appearance. Three other spots of a like nature were found on the membrane covering the left great ala of the sphenoid, and on detaching the membrane under each inflammatory spot, the bone was carious. The posterior part of the sella turcica was also in a state of caries; in three spots it was entirely eaten through, and in the other parts it was transparent."

One case of apoplexy proved fatal in the Nile.

Lungs and Pleura.—The number of inflammatory affections was eighty. Of these, the loss to the service by invalidings was five, and by deaths four, being in the ratio in the former of 1·1, and in the latter of ·8 per 1,000 of the mean force.

Ten deaths occurred from phthisis, and twenty-three were invalided.

Heart and Blood Vessels.—No fewer than forty-six cases are returned under the head of "functional and organic diseases of the heart." Of these, fourteen were invalided, and three died. In two of the latter cases the heart affections were consequent upon rheumatic disease; the third was a case in which pericarditis attacked a man labouring under acute bronchitis.

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bronchitis. He appeared to be doing tolerably well for some time in hospital, but a recurrence of the cardiac symptoms carried him off. On post-mortem examination, extensive disease both of the heart and pericardium was found, with dilatation of the arch of the aorta.

One death is recorded from hæmorrhoids. The patient, an officer, had suffered for some years from the disease, losing from time to time large quantities of blood. From motives of delicacy he had concealed his condition, and was averse to being medically treated. He was at last reduced to such a state, that when placed upon the sick list, he had become pale, anæmic, and cadaverous ; his legs were œdematous, and he was so extremely weak as to be obliged to confine himself to the ship. On examination, very extensive hæmorrhoidal disease was discovered. He derived much relief from the treatment to which he was subjected, and was recommended to go up the mountains at Jamaica for change of climate and temperature. He was carried up by bearers, and arrived in the cool of the evening. He ate a good dinner, and did not retire until 10 o'clock. During the night he had an attack of diarrhœa, which reduced him very much. When seen he had rallied, and on consultation it was decided that the external hæmorrhoids should be tied. This was performed effectually without causing the least pain. Two days afterwards a portion of the mass came away, and he appeared to be progressing favourably. On the following day it is reported, that " he had passed a somewhat restless night, and had complained of incessant thirst throughout the day. The tongue was dry, brown, and thickly coated, and he was rather feverish." Next day, however, " he was so much better that he shaved himself, and sat up for an hour, and there seemed every prospect of his recovering." In the afternoon, however, a relapse came on, typhoid symptoms set in, and afterwards he became slightly wandering. On the following morning, although quite sensible, his condition had not improved. At midday he was, despite every remedy, evidently sinking, and in the afternoon he expired.

Stomach and Bowels.—Of fourteen cases of inflammatory affections, seven were invalided. These were chiefly cases of chronic gastritis and dyspepsia.

Dysentery became very prevalent in the Cadmus on the setting

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setting in of the rainy season at Trinidad, many cases of diarrhœa assuming the true dysenteric type. One of these proved fatal in Jamaica Hospital. The man had had several previous attacks of the disease.

A fatal case of diarrhœa occurred in the Nile. The patient, whose constitution seems to have been previously seriously impaired, had been under treatment both in Jamaica and Bermuda Hospitals for stricture. On his return from the latter establishment, and while taking a passage in the Racer to rejoin his ship, which was at Halifax, he was seized with profuse diarrhœa, accompanied with much gastric irritability, from which he sank exhausted, the remedies employed to combat these symptoms having had only a very temporary effect.

Five cases of cholera appear in the returns. Three of these were of a trifling character, but of the other two cases, both of which occurred on board the Nile at Port Royal in the beginning of April, the surgeon says, "In the first, the man had been on leave the day before, but he would not own to having been drinking. During the day of the attack (he did not complain, nor was he brought under notice in the sick bay until the evening), he felt out of sorts, ate nothing, but drank water largely. He was carried down from the 'Head,' where he had been violently purged, for more than two hours, it was said, and was then much depressed; severe cramps, and watery vomiting were frequent, and he passed four rice-water stools, which were seen by the assistant surgeon and myself. Opiates, mercury, arsenical solution, brandy, &c., were given, and suppositories used without benefit; and, as his strength was failing, chloroform was administered by inhalations of small quantities, so as constantly to stimulate him; and after a short time all the peculiar symptoms of the disease abated, and disappeared; he gradually became less restless, and in an hour or two dozed off asleep. Diuretics were given early next morning, and the urinary secretion was re-established. That morning a young marine came into the bay complaining of watery vomiting and purging, with a feeling of much weakness, which had come on an hour or so before. Whilst speaking, he was obliged to use the bed-pan, and a large rice-water stool was passed without any vomiting or cramps. He was immediately put in a cot; ten grains of calomel, and one grain of opium, were given; hot water in bottles was put to his feet and legs. The vomiting

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ting and cramps entirely ceased, and no evacuation took place until during the night, when he passed a large glairy and shreddy motion, streaked with blood, similar to what had been passed in the previous case after the rice-water stool ceased. Both men made speedy recoveries. No cholera existed on shore at the time."

The surgeon of the Imaum states, in the returns for the first two quarters of the year, that diarrhœa and dysentery had been prevalent, and often fatal, among the inhabitants of Port Royal, and that some of the ill fed at Kingston had also suffered.

Disease of the Kidneys, Bladder, &c.—The number of cases of syphilis is considerably above the average ratio. The greatest number of cases occurred on board the Mersey and the Nile. The thirty-four cases, however, from the latter ship were contributed by only twenty-four persons. One man had two primary attacks (quite distinct); four men had a primary and secondary attack. One man had a primary, and two secondary attacks, and three had two secondary attacks. Some of the primary attacks were concealed for some time and neglected. Eleven cases of syphilis, and four of stricture of the urethra, were invalided.

A case of "Bright's disease" occurring in an able seaman of the Terror proved fatal in hospital. The patient, an old man for a seaman, was of dissipated habits. "The urine was pale, of low specific gravity, contained a large quantity of albumen, and the microscope detected the presence of tube casts, and fatty corpuscles." The disease latterly was complicated with great irritability of stomach, dysenteric purging, sloughing stomatitis, and epistaxis. Entire suppression of urine took place thirty-six hours before death, which was preceded by all the symptoms of uræmic poisoning.

Phlegmon and Abscess.—A very large number of cases coming under this head were under treatment, nearly one-fourth of which are returned from Her Majesty's ship Mersey; this ship, it would appear, was kept very much at sea, so that during fourteen months and six days the ship's company had been 225 days on salt provisions; during the Michaelmas quarter, when 152 cases of abscess were added to the sick list,

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list, salt provisions were issued on sixty-five days, and during the first quarter of the year, when sloughing ulcer became prevalent in the ship, the ship's company were fifty-nine days on salt provisions; during the other two quarters, when these diseases were not prevalent in any degree, the issues of salt provisions were on thirty-nine and thirty-one days respectively.

It is impossible to overlook the effect that long-continued dieting on salt provisions may have in reducing the health of a ship's company, and in rendering them, in consequence, liable to affections which indicate a general deterioration of the system. The demands upon the physical strength of seamen are necessarily very great and continuous, and their powers of endurance will very much depend upon the quality of the food which is supplied to them. Should the supply of nutritive material be unequal to the demand made upon the physical powers, the insufficiency will very speedily be indicated by various affections, trifling at first it may be in themselves, but very significant as pointing out the operation of a cause which is acting deleteriously upon the whole ship's company. It is, of course, almost unnecessary to say that, in estimating the sufficiency of food, reference is to be had not to its quantity, but to its nutritive value; and although no direct experiments have as yet been made to ascertain the absolute nutritive value of salt beef and salt pork, it is fully established that a very large proportion of the albumen, the nutritive element of animal food, is dissolved out of the meat in the present process of salting, and consequently lost to the men. Although, then, we have for the present no article of food which can with prudence be relied upon as a substitute for salt provisions at sea, it is evident that they ought not to be made use of more than is absolutely necessary.

Without overestimating the influence of this agency in furnishing so many cases of these affections on board the Mersey, it must be allowed a certain amount of weight. The ship itself was evidently fitted to insure a high standard of health amongst the men: the surgeon says, "she is spacious and well ventilated; a line of open ports run from stem to stern along the main and upper decks; the lower, in which the men are berthed, is lofty, provided with numerous scuttles, high out of the water, which may be carried open in a very rough sea, when those of other ships must of necessity be closed. She is remarkably clean, and no efforts are spared to keep her as perfectly as possible in this condition. The

The bilge is whitewashed weekly; it is pumped out daily, and is then dried out with flannel rags, previously to stoves being placed to dry up all remaining moisture."

Ulcer was much less prevalent than during the preceding year. On board the Mersey, however, during the first quarter of the year, it assumed a sloughing character in about a dozen cases. The surgeon, remarking on these cases, says, "It may not be out of place to give some general description of this malady, as it showed itself; for instance, a bubo, ulcer or wound, which had previously been inactive or indolent, assumed a dusky aspect; the surrounding skin became tinged with a margin of inflammation, limited and by no means angry; there was a good deal of local heat and pain, and a livid annulus quickly encircled the border of the ulcer. This livid discoloration extended in circumference daily into the surrounding redness, while the surface in the wake of this advancing line lost its vitality, and a blackish, moist, fetid slough was left behind. This was the sequence of events for a few days; in a space of time, varying from three to five days, the slough became isolated, and, thrown off by the disjunctive process of nature, leaving a healthy surface underneath. The stage of pyrexia, which was well marked up to this period, underwent a considerable abatement, and the anxiety which the patient had betrayed in his countenance was considerably calmed."

Wounds, &c.—Three men were killed by falling from aloft; one fell out of his hammock, fracturing his skull, and occasioning laceration of the right middle meningeal artery. An officer committed suicide by cutting his throat. A marine was accidentally poisoned. Twenty-two men were drowned, eight seamen and one marine by falling overboard, three by falling into the sea from wharves, one at Grenada, one at Halifax, and one at Havanna; one seaman was knocked overboard while shortening sail in a boat, and drowned; one was drowned while bathing at Sacrificios; and six seamen and two marines lost their lives by the upsetting of boats.

Total mortality for the year 200. Seventy-eight from wounds and injuries of various kinds, and drowning, and 172 from disease, the former being in the ratio of 5·8, and the latter of 36·2 per 1,000 of mean force. Of the 172 deaths from disease, 141 were from yellow fever alone.

Invalided.

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Invalided.—One man was invalided for the sequelæ of fever, twenty for diseases of the cerebral system, thirty-one for diseases of the respiratory organs, sixteen for diseases of the heart and blood vessels, seven for affections of the stomach and bowels, sixteen for diseases of the urinary and genital organs, twelve for rheumatism, fifteen for diseases of the bones and joints, six for hepatic affections, eight for diseases affecting the sight, one for deafness, twelve for eruptions, scrofula, abscess and ulcer, seven for dyspepsia and debility, one for dropsy, nine for wounds and injuries, and eight for hernia, making in all 172, or in the ratio of 36·2 per 1,000 of mean force, being in almost exactly the same ratio as the preceding year.

TABLE, No. 1.

SHOWING the Number of CASES of all DISEASES and INJURIES, and the Number INVALIDED and DEAD, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever	404	85·	- -	- -	3	·6
Yellow Fever	319	67·2	1	·2	141	29·7
Intermittent Fever	89	18·7	—	—	—	—
Small-pox	8	1·7	—	—	—	—
Scarlatina	1	·2	- -	- -	1	·2
Disease of the Brain	1	·2	- -	- -	3	·6
Apoplexy	4	·8	—	—	—	—
Epilepsy	26	5·5	11	2·3	—	—
Paralysis	13	2·7	9	1·9	—	—
Insanity	4	·8	2	·4	—	—
Delirium Tremens	31	6·5	—	—	—	—
Headache, &c.	56	11·8	—	—	—	—
Inflammation of the Lungs and Pleura	80	16·8	5	1·1	4	·8
Phthisis and Hæmoptysis	24	5·1	23	4·8	10	2·1
Influenza and Catarrh	596	125·5	—	—	—	—
Cynanche	207	43·6	—	—	—	—
Asthma	8	1·7	3	·6	—	—
Functional and Organic Disease of the Heart	46	9·7	14	2·9	3	·6
Hæmorrhoids	13	2·7	1	·2	1	·2
Varix	2	·4	1	·2	—	—
Inflammation of the Stomach and Bowels	14	2·9	7	1·5	—	—
Dysentery	32	6·7	- -	- -	1	·2
Diarrhœa	630	132·6	- -	- -	1	·2
Cholera	5	1·1	—	—	—	—
Constipation and Colic	135	28·4	—	—	—	—
Inflammation of the Liver	19	4·	6	1·3	—	—
Jaundice	17	3 6	—	—	—	—
Splenitis	3	·6	—	—	—	—

TABLE, No. 1.—Showing the Number of Cases of all Diseases, &c.—*continued.*

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Inflammation of the Bladder and Kidneys	3	·6	1	·2	1	·2
Syphilis	170	35·8	11	2·3	—	—
Gonorrhœa	58	12·2	—	—	—	—
Orchitis	96	20·2	—	—	—	—
Stricture	29	6·1	4	·8	—	—
Incontinence of Urine, &c.	7	1·5	—	—	—	—
Rheumatism	419	88·2	12	2·5	—	—
Gout	5	1·1	—	—	—	—
Disease of the Bones and Joints	41	8·6	15	3·2	—	—
Ophthalmia	51	10·7	1	·2	—	—
Amaurosis and Cataract	12	2·5	7	1·5	—	—
Otitis and Deafness	37	7·8	1	·2	—	—
Erysipelas	14	2·9	- -	- -	1	·2
Scrofula	4	·8	2	·4	—	—
Bubo (*Symp.*)	83	17·5	—	—	—	—
Phlegmon and Abscess	1,780	374·7	3	·6	1	·2
Ulcer	618	130·1	4	·8	1	·2
Psora	16	3·4	1	·2	—	—
Eruptions, &c.	134	28·2	2	·4	—	—
Dyspepsia and Debility	364	76·6	7	1·5	—	—
Scurvy	4	·8	—	—	—	—
Dropsy	9	1·9	1	·2	—	—
Worms	7	1·5	—	—	—	—
Wounds and Injuries	1,619	340·8	9	1·9	4	·8
Burns and Scalds	80	16·8	—	—	—	—
Hernia	5	1·1	8	1·7	—	—
Drowned	- -	- -	- -	- -	22	4·6
Suicide	- -	- -	- -	- -	1	·2
Poison	- -	- -	- -	- -	1	·2
TOTAL	8,452	1779·4	172	36·2	200	42·1

TABLE, No. 2.

SHOWING the Number of DAYS' SICKNESS from each DISEASE, and from INJURIES, the Average Number of Men Sick Daily, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever	4,012	475	4,487	12·3	2·6
Yellow Fever	3,575	744	4,319	11·8	2·5
Intermittent Fever	630	24	654	1·9	·4
Small-pox	30	- -	30	—	—
Measles	- -	11	11	—	—
Scarlatina	31	- -	31	—	—
Apoplexy	7	11	18	—	—
Epilepsy	297	17	314	·9	·2
Paralysis	341	169	510	1·4	·3
Insanity	130	12	142	·4	·1
Delirium Tremens	246	41	287	·8	·2
Headache &c.	270	7	277	·8	·2
Inflammation of the Lungs and Pleura	1,355	337	1,692	4·6	1·
Phthisis and Hæmoptysis	783	275	1,058	2·9	·6
Influenza and Catarrh	4,708	57	4,765	13·	·3
Cynanche	1,340	21	1,361	3·7	·8
Asthma	91	9	100	·3	·1
Functional and Organic Disease of the Heart	886	161	1,047	2·9	·6
Hæmorrhoids	213	53	266	·7	·1
Varix	15	10	25	—	—
Inflammation of the Stomach and Bowels	219	45	264	·7	·1
Dysentery	516	210	726	1·9	·4
Diarrhœa	4,711	52	4,763	13·	·3
Cholera	30	- -	30	—	—
Constipation and Colic	653	37	690	1·9	·4
Inflammation of the Liver	315	87	402	1·1	·2
Jaundice	249	6	255	·7	·1
Splenitis	92	- -	92	—	—

TABLE, No. 2.—Showing the Number of Days' Sickness from each Disease, &c.—*contd*.

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Inflammation of the Bladder and Kidneys	86	59	145	·4	·1
Syphilis	4,896	1,928	6,824	18·7	3·9
Gonorrhœa	967	18	985	2·5	·5
Orchitis	1,690	76	1,766	4·9	1·
Stricture	457	197	654	1·9	·4
Incontinence of Urine, &c.	175	32	207	·6	·1
Rheumatism	5,005	772	5,777	15·9	3·3
Gout	99	11	110	·3	·1
Disease of the Bones and Joints	1,140	374	1,514	4·1	·9
Ophthalmia	523	18	541	1·5	·3
Amaurosis and Cataract	220	49	269	·7	·1
Otitis and Deafness	427	44	471	1·3	·3
Erysipelas	187	5	192	·5	·1
Scrofula	154	- -	154	·4	·1
Bubo (*Symp.*)	2,446	172	2,618	7·2	1·5
Phlegmon and Abscess	14,173	501	14,674	40·2	8·4
Ulcer	13,129	1,745	14,874	40·7	8·5
Psora	100	- -	100	·3	·1
Eruptions, &c.	2,302	128	2,430	6·7	1·4
Dyspepsia and Debility	2,471	202	2,673	7·4	1·6
Scurvy	47	- -	47	—	—
Dropsy	189	97	286	·8	·2
Worms	103	- -	103	·3	·1
Wounds and Injuries	16,241	1,153	17,394	47·6	10·2
Burns and Scalds	1,200	14	1,214	3·3	·7
Hernia	137	- -	137	·4	·1
TOTAL	94,309	10,466	104,775	287·1	60·4

Table, No. 3.

Showing the Number Invalided from each Ship employed

CAUSE of NVALIDING.	Barracouta.	Bulldog.	Cadmus.	Challenger.	Cygnet.	Desperate.	Firebrand.	Gladiator.	Hydra.
Yellow Fever	–	–	–	–	–	–	–	–	–
Insanity	–	–	–	–	–	–	–	–	–
Epilepsy	1	–	–	–	–	–	–	–	–
Paralysis	–	–	1	–	–	–	–	–	–
Inflammation of the Lungs and Pleura	–	–	1	–	–	–	1	–	–
Phthisis and Hæmoptysis	1	1	–	–	–	1	–	1	1
Asthma	–	–	–	–	–	–	–	–	–
Functional and Organic Disease of the Heart	1	–	2	1	–	–	–	–	1
Hæmorrhoids	–	–	1	–	–	–	–	–	–
Varix	–	–	–	–	–	–	–	–	–
Inflammation of the Stomach and Bowels	–	–	2	1	–	–	1	–	–
Inflammation of the Bladder and Kidneys	1	–	–	–	–	–	–	–	–
Syphilis	–	–	2	–	–	–	–	–	–
Stricture	–	–	1	1	–	–	–	–	–
Rheumatism	–	–	1	–	–	–	3	–	–
Disease of the Bones and Joints	2	–	–	–	–	–	1	–	–
Inflammation of the Liver	–	–	1	–	–	–	1	–	1
Inflammation of the Eyes	–	–	–	–	–	–	–	–	–
Amaurosis and Cataract	–	–	–	1	1	–	–	–	1
Otitis and Deafness	–	–	–	–	–	–	–	–	–
Scrofula	–	–	–	–	–	–	–	–	–
Phlegmon and Abscess	1	–	1	–	–	–	–	–	–
Ulcer	–	–	–	1	–	–	1	–	–
Psora	1	–	–	–	–	–	–	–	–
Eruptions	–	–	–	–	–	–	–	–	–
Dyspepsia and Debility	–	–	–	–	–	1	–	1	–
Dropsy	–	–	–	–	–	–	–	1	–
Wounds and Injuries	–	–	3	–	–	–	–	–	–
Hernia	–	–	–	1	–	–	–	–	1
*Total	8	1	16	6	1	2	8	3	5

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* One man was invalided for Epilepsy from the Skipjack,

- - - - - - - TABLE, No. 3.

- - - on the NORTH AMERICAN and WEST INDIA Station.

Imaum.	Immortalité.	Jason.	Landrail.	Mersey.	Nile.	Nimble.	Rinaldo.	St. George.	Spiteful.	Steady.	Styx.	Terror.	TOTAL.
–	–	–	–	–	1	–	–	–	–	–	–	–	1
–	1	–	–	–	–	–	–	1	–	–	–	–	2
2	2	–	–	–	1	–	–	5	–	–	–	–	11
–	–	–	–	1	2	–	–	4	1	–	–	–	9
1	1	–	–	–	–	–	–	1	–	–	–	–	5
–	2	–	1	4	4	1	–	5	–	1	–	–	23
–	–	–	–	–	–	–	–	2	–	1	–	–	3
1	–	–	–	–	2	–	–	6	–	–	–	–	14
–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	1	–	–	–	–	1
–	–	–	–	–	–	–	–	–	3	–	–	–	7
–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	1	1	–	1	2	–	1	3	–	–	–	–	11
–	–	1	–	–	–	–	–	1	–	–	–	–	4
2	–	1	–	2	1	–	–	1	1	–	–	–	12
–	–	–	1	–	1	–	2	7	1	–	–	–	15
1	–	–	1	1	–	–	–	–	–	–	–	–	6
–	–	–	–	1	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	3	–	–	–	1	7
–	–	–	–	–	–	–	–	1	–	–	–	–	1
–	–	–	–	–	1	–	1	–	–	–	–	–	2
–	–	–	–	1	–	–	–	–	–	–	–	–	3
–	–	–	–	–	–	–	–	2	–	–	–	–	4
–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	1	–	–	1	–	–	–	–	2
–	–	1	–	1	–	–	–	–	3	–	–	–	7
–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	1	2	–	–	2	–	–	1	–	9
–	1	–	1	–	–	–	–	4	–	–	–	–	8
7	8	4	4	13	18	1	4	50	9	2	1	1	172

from which no Medical Returns were received.

TABLE, No. 4.

SHOWING the Number of DEATHS in each Ship employed on the NORTH AMERICAN and WEST INDIA Station.

CAUSE of DEATH.	Barracouta.	Cadmus.	Challenger.	Desperate.	Firebrand.	Hydra.	Imaum.	Immortalité.	Jason.	Mersey.	Nile.	Racer.	Rinaldo.	St. George.	Spiteful.	Steady.	Terror.	TOTAL.
Continued and Remittent Fever	–	–	–	–	–	–	–	–	2	–	–	–	–	–	–	–	1	3
Yellow Fever	6	–	3	–	52	–	–	–	19	3	–	19	2	–	37	–	–	141
Scarlatina	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1
Inflammation of the Brain	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	2
Softening of the Brain	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1
Inflammation of the Lungs and Pleura	–	–	–	–	–	–	–	–	–	1	1	–	–	1	–	1	–	4
Phthisis and Hæmoptysis	1	–	–	1	–	–	–	–	–	1	2	–	–	4	1	–	–	10
Disease of the Heart	–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	1	–	3
Hæmorrhoids	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	1
Dysentery	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Diarrhœa	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1
Bright's Disease	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1
Erysipelas	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1
Abscess	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1
Ulcer	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1
Wounds and Injuries	–	–	–	–	–	–	–	1	–	–	2	–	–	1	–	–	–	4
Suicide	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1
Drowned	1	1	–	–	1	1	3	–	2	1	–	1	1	3	1	5	1	22
Poison	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	1
TOTAL	8	2	3	1	55	1	4	1	24	7	11	20	3	10	39	7	4	200

TABLE, No. 5.

SHOWING the Names of the SHIPS; the Average Complements and Mean Force of each Ship; the Total Number of Cases; the Total Number of Days' Sickness on Board; and the Average Number of Men Daily Sick.

C. S. Station changed. C. Commissioned. P. O. Paid off. D. Returns defective.

NAME of SHIP.		Number of Guns, Horse Power, &c.	Period.	Average Complement.	Mean Force of each Ship.	Number of Cases.	Number of Days' Sickness on Board.	Average Number of Men Daily Sick.	Ratio per 1,000 of Mean Force of each Ship.	Number discharged to Hospital.
Barracouta -	-	6 P. W. 300	year	170	170	326	4,001	11·	64·7	33
Bulldog -	- C. S.	6 P. W. 500	3 mo.	165	40	109	1,457	4·	100·	1
Cadmus -	-	21 Sc. 400	year	260	260	495	6,269	17·2	66·2	23
Challenger -	C.	22 Sc. 400	6 mo.	290	145	312	3,484	9·5	65·5	2
Cygnet -	- C.	5 Sc. 80	6 mo.	65	30	112	1,049	2·9	96·7	18
Desperate	- C. S.	8 Sc. 400	9 mo.	160	120	160	2,109	5·8	48·3	7
Firebrand	- C. S.	6 P. W. 410	9 mo.	180	135	469	5,931	16·2	120·	61
Gladiator	P. O.	6 P. W. 430	10 mo.	190	155	343	2,510	6·9	44·5	7
Hydra - -	-	6 P. W. 220	year	130	130	212	3,013	8·3	63·8	3
Imaum - -	-	10 - -	year	185	185	251	2,336	6·4	34·6	11
Immortalité	C. S.	35 Sc. 600	3 mo.	580	145	212	2,823	7·7	53·1	7
Jason -	- C. S.	21 Sc. 400	6 mo.	260	130	449	2,320	6·4	49·2	2
Jasper -	P. O.	1 Sc. 80	4 mo.	50	15	28	169	·5	33·3	8
Landrail -	D.	5 Sc. 80	9 mo.	70	50	139	1,439	3·9	78·	11
Mersey - -	-	40 Sc. 1,000	year	615	615	1,256	12,115	33·2	54·	55
Nile - -	-	78 Sc. 500	year	870	870	891	11,182	30·6	35·2	28
Nimble -	- C.	5 Sc. 80	9 mo.	70	50	55	672	1·8	36·	1
Racer - -	-	11 Sc. 150	year	125	125	314	2,894	7·9	63·2	4
Rinaldo -	- C.	17 Sc. 200	6 mo.	180	90	210	2,012	5·5	61·1	6
St. George -	-	84 Sc. 500	year	780	780	1,118	15,208	41·7	53·5	20
Spiteful -	- C. S.	6 P. W. 280	9 mo.	170	125	517	4,928	13·5	108·	14
Steady -	- C.	5 Sc. 80	6 mo.	60	30	118	823	2·3	76·7	10
Styx -	P. O.	6 P. W. 280	5 mo.	155	65	108	1,480	4·1	63·1	7
Terror - -	-	16 Sc. 200	year	170	170	118	626	1·7	10·	58
Valorous	P. O.	16 P. W. 400	7 mo.	200	120	130	1,147	3·1	25·8	1

TABLE, No. 6. - - - - - - - -

SHOWING the Number of CASES of all DISEASES and INJURIES in each

DISEASE OR INJURY.	Barracouta.	Bulldog.	Cadmus.	Challenger.	Cygnet.	Desperate.	Firebrand.	Gladiator.	Hydra.	Imaum.
Continued and Remittent Fever	–	9	24	26	21	1	115	–	4	3
Yellow Fever	11	–	–	8	–	–	65	–	–	–
Intermittent Fever	3	–	–	1	5	4	9	2	2	16
Small-pox	–	–	–	–	–	–	–	1	1	–
Scarlatina	–	–	–	–	–	–	–	–	–	–
Inflammation of the Brain	–	–	–	–	–	–	1	–	–	–
Apoplexy	1	–	–	2	–	–	–	–	–	–
Epilepsy	2	–	1	–	–	–	–	–	2	8
Insanity	–	–	–	–	–	–	–	–	–	–
Delirium Tremens	4	1	3	2	1	–	–	2	2	–
Paralysis	–	–	1	–	–	1	1	–	1	1
Headache, &c.	3	3	3	3	6	1	–	1	–	1
Inflammation of the Lungs and Pleura	–	–	4	–	2	–	2	12	1	3
Phthisis and Hæmoptysis	1	–	1	–	1	1	–	–	1	–
Catarrh	12	–	18	10	–	8	4	36	23	11
Cynanche	2	–	15	3	–	4	6	9	12	3
Asthma	–	–	–	–	–	–	2	–	–	–
Functional and Organic Disease of the Heart	2	–	6	2	–	–	4	1	3	5
Hæmorrhoids	–	–	5	–	–	–	–	–	–	2
Varix	–	–	–	–	–	–	–	–	–	–
Inflammation of the Stomach and Bowels	–	*a*1	*a*3	–	–	–	2	–	–	3
Dysentery	2	–	17	1	–	–	–	–	–	–
Diarrhœa	32	6	44	24	3	11	43	62	30	6
Cholera	–	–	–	–	–	–	2	–	1	–
Constipation and Colic	4	1	9	11	5	10	15	2	4	–
Inflammation of the Liver	2	–	6	–	–	1	2	–	–	1
Jaundice	2	–	1	1	–	–	2	–	–	–
Splenitis	1	–	–	–	–	–	1	–	–	–
Inflammation of the Kidneys and Bladder	–	–	2	–	–	–	–	–	–	–
Syphilis	18	3	7	11	1	–	1	2	1	14
Gonorrhœa	5	–	7	1	–	–	2	–	2	5
Orchitis	3	–	5	2	1	–	3	3	2	–
Stricture	4	–	3	4	–	2	2	2	–	–
Incontinence of Urine, &c.	–	–	2	–	–	–	–	–	–	–
Rheumatism	11	3	29	14	6	8	17	26	6	9
Gout	–	–	–	–	–	–	1	–	–	3
Disease of the Bones and Joints	1	1	1	–	–	–	–	–	1	4
Inflammation of the Eyes	–	1	2	3	–	–	–	4	2	–
Amaurosis and Cataract	1	–	–	–	–	–	–	–	1	–
Otitis and Deafness	3	–	2	3	–	–	1	2	–	–
Erysipelas	–	–	2	–	–	–	–	–	1	3
Scrofula	–	–	–	–	–	–	–	–	–	–
Bubo (*Symp.*)	3	1	8	3	1	3	3	1	–	4
Phlegmon and Abscess	66	36	87	66	30	17	69	55	36	30
Ulcer	38	8	77	35	8	34	19	12	12	32
Psora	1	–	–	–	–	–	–	–	–	–
Eruptions	1	1	3	5	1	16	4	4	–	2
Dyspepsia and Debility	25	6	12	23	7	8	23	20	3	40
Scurvy	–	–	–	–	–	–	–	–	–	–
Dropsy	–	–	–	–	1	–	–	1	–	1
Worms	1	–	3	–	–	–	–	–	–	–
Wounds and Injuries	58	23	79	48	12	26	46	81	54	38
Burns and Scalds	3	5	3	–	–	4	2	2	4	3
Hernia	–	–	–	–	–	–	–	–	–	–
TOTAL	326	109	495	312	112	160	469	343	212	251

a One Hæmatemesis.

- - - - - - - TABLE, No. 6.

Ship employed on the NORTH AMERICAN and WEST INDIA Station.

Immortalité.	Jason.	Jasper.	Landrail.	Mersey.	Nile.	Nimble.	Racer.	Rinaldo.	St. George.	Spiteful.	Steady.	Styx.	Terror.	Valorous.	TOTAL.
11	20	–	5	30	28	3	9	5	–	73	2	2	13	–	404
–	80	–	–	2	–	–	61	3	–	89	–	–	–	–	319
–	2	–	9	–	–	–	19	–	–	16	–	1	–	–	89
–	–	–	–	2	1	–	–	–	3	–	–	–	–	–	8
–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	4
1	–	–	–	2	2	–	–	–	5	1	–	1	1	–	26
1	–	–	–	1	–	–	–	–	2	–	–	–	–	–	4
–	1	–	–	9	1	–	–	–	1	3	–	–	1	–	31
–	–	–	–	2	1	–	–	–	3	1	–	1	–	–	13
1	–	1	4	1	1	–	–	1	20	2	–	1	2	1	56
4	3	–	1	6	25	1	1	1	2	3	5	–	3	1	80
3	–	–	2	4	4	–	–	–	5	–	1	–	–	–	24
14	28	6	8	85	42	4	15	41	173	12	2	6	3	35	596
26	2	–	3	27	63	2	5	–	7	4	1	7	2	4	207
–	–	–	–	1	–	–	–	–	4	–	–	1	–	–	8
3	4	–	–	1	5	–	–	–	7	2	1	–	–	–	46
–	–	–	1	3	–	–	–	–	–	–	–	2	–	–	13
–	–	–	1	–	–	–	–	–	1	–	–	–	–	–	2
1	–	–	–	–	1	–	–	–	*a* 2	1	–	–	–	–	14
–	–	–	1	2	–	2	–	–	2	1	1	1	1	1	32
5	52	1	6	62	42	8	28	13	56	59	18	7	6	6	630
–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	5
2	4	1	8	16	7	1	5	–	8	2	1	8	–	11	135
1	1	1	–	3	–	–	–	–	–	–	1	–	–	–	19
1	–	–	–	–	6	–	–	–	3	–	–	1	–	–	17
1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3
–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	3
1	9	2	1	31	34	3	4	9	8	2	3	1	1	3	170
–	5	–	3	6	2	–	–	3	8	–	1	3	5	–	58
1	1	1	–	21	17	1	2	4	15	9	–	3	1	1	96
–	1	–	–	3	2	–	3	–	2	–	–	–	–	1	29
–	–	–	–	–	–	–	1	1	1	2	–	–	–	–	7
15	20	4	2	62	52	2	31	6	47	22	18	–	4	5	419
–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	5
–	2	–	6	5	8	1	–	–	10	1	–	–	–	–	41
2	–	–	–	12	6	–	1	3	11	1	–	–	1	2	51
–	–	–	–	1	–	–	–	–	8	–	–	–	1	–	12
–	6	–	–	6	1	–	1	–	6	6	–	–	–	–	37
1	–	–	–	2	1	2	1	–	1	–	–	–	–	–	14
–	–	–	–	–	2	–	–	1	–	1	–	–	–	–	4
–	–	–	–	24	7	1	2	5	13	2	1	1	–	–	83
47	69	5	45	412	181	13	51	44	252	67	30	20	33	19	1,780
11	25	1	5	61	63	2	15	5	90	33	8	8	13	3	618
5	3	–	–	–	–	–	–	–	3	4	–	–	–	–	16
7	2	1	4	19	15	–	1	2	34	6	–	3	–	3	134
2	46	3	8	26	38	1	17	3	9	28	8	2	6	–	364
–	–	–	–	4	–	–	–	–	–	–	–	–	–	–	4
–	–	–	–	1	–	–	–	–	–	4	–	1	–	–	9
–	–	–	–	3	–	–	–	–	–	–	–	–	–	–	7
42	61	1	16	282	217	8	38	56	280	59	14	26	19	35	1,619
2	1	–	–	14	10	–	2	4	16	1	2	1	1	–	80
1	–	–	–	1	2	–	1	–	–	–	–	–	–	–	5
212	449	28	139	1,256	891	55	314	210	1,118	517	118	108	118	130	8,452

BRAZIL STATION.

Brazil Station.

NINE Vessels were employed on the Brazil Station during the year 1861. The mean force corrected for time was 1,120. The total number of cases of all kinds of disease and injury amounted to 1,563. Of these, thirty-one were invalided, and eighteen died; the former being in the ratio of 27·7, and the latter of 16·1 per 1,000 of the mean force.

The daily loss to the service from fevers was in the ratio of about 3· per 1,000, and the same ratio obtained in diseases of the respiratory organs. The daily number sick from diseases of the genito-urinary system was 6·1 ; from boils, abscesses, ulcers, &c., 13·8 ; and from wounds and injuries of various kinds 9·9. The daily number sick from all causes was 48·6 per 1,000 ; so that upwards of one-fourth of the loss of service is attributable to boils, abscesses and ulcers.

Fever.—Seventy-five cases of primary fever were under treatment; of these, seven were in the Ardent, nine in the Curaçoa, nineteen in the Forth, thirteen in the Leopard, twenty-three in the Madagascar, and four in the Spy.

With the exception of the month of February, when the Ardent was at the Falkland Islands, that ship was employed during the whole year in the River Plate, and in the River Parana, a tributary of the Plate. Some of the cases of fever which were under treatment during this time were of a low type, severe in some of their symptoms, and tardy in convalescence. One, a case evidently of true typhoid fever, which may be said to be the endemic fever of the River Plate, proved fatal, apparently from perforation of the bowels. Diarrhœa, with great nervous prostration, characterised the attack, which was terminated by the sudden accession of symptoms of peritonitis, a termination of fever, which the surgeon says in his journal " is not an uncommon occurrence in the River Plate."

The Curaçoa also was during the whole year stationed in the same river. Of nine cases of primary fever reported,

six

six were of a comparatively trivial character. Of the remaining cases, one, which proved fatal, had marked abdominal complication from a very early period of the seizure. In another case, which was originally entered as a case of intermittent fever, the adynamic symptoms were very marked; the bowels were regular apparently throughout; but the tongue was always brown and dry, and the patient died exhausted, after being nearly six weeks under treatment.

The surgeon of the Curaçoa, in remarking on the probable causes of disease in the River Plate, says, "Placed around the shore of the bay are numerous 'saladeros,' or great establishments, in which multitudes of cattle—many hecatombs—are daily slaughtered; the flesh being dried, and the bones and fat boiled down. When the wind blows from the direction of these places (*i. e.* from a north and north-westerly quarter), a dense smoke and steam of the most abominably nauseous animal odour comes rolling off and darkening the air. As the proprietors are 'men of property,' who make large fortunes by their processes, they have been careful to disseminate the notion amongst the inhabitants that these fœtid exhalations are of a very salutary nature; but it is difficult for a non-interested inhaler to admit any beneficent properties, in what both the sense of smell and taste declare to be a very serious nuisance."

The cases of fever on board the Forte were of a simple character apparently, and are referred by the surgeon in some cases to exposure to cold, in some to exposure to the sun, and in some few instances to bathing.

Several cases of Remittent fever, of a more or less severe character, occurred on board the Leopard at Rio de Janeiro. Twenty-three cases of remittent fever were also under treatment on board the Madagascar, the receiving ship at Rio. A large proportion of these cases occurred in the first quarter of the year. In the remarks appended to the nosological report for that quarter, the surgeon says, "During January and February malignant sporadic cases of yellow fever appeared in this city. During the whole quarter a mild kind of remittent fever was common amongst the merchant shipping in the inner harbour, with an occasional case of death by black vomit. The cases on board this ship have been throughout mild, and appeared only among the men and boys newly joined." A case, terminating fatally, is returned as remittent fever, on board Her Majesty's ship Spy. The patient, a young officer, had been on shore in charge of a boat's crew, sent to scrub sails, &c., in Albroa Bay, Ilha Grande;

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Grande; "whilst on shore, they bathed, were exposed to the sun, and before returning to the ship got wet through by a shower of rain." Five days afterwards he was seized with fever, at first rather high, but soon assuming a low type. Diarrhœa set in early, and continued persistent almost throughout the whole case. There was tympanitic abdomen with iliac gargouillement. An eruption of light brown petechiæ appeared on the chest, and some days afterwards purple spots appeared on the fore arms, elbows, knees, and between the fingers. One or two apparent remissions occurred during the progress of the case. The sensorium was more or less affected throughout. Towards the close of the case, boils and small abscesses complicated all his symptoms, and added much to his distress; great irritability of stomach set in for some days before his death, and he died on the morning of the thirty-third day of his being under treatment, "having passed a terrible night, incessantly vomiting an orange coloured fluid, which stained the tongue."

This appears to have been a somewhat complicated case; the abdominal symptoms, and the eruption point to its true typhoid character, while the remissions would indicate the influence of the malarial agency to which he was exposed at Ilha Grande, where marsh fever is very prevalent. Unfortunately there was no post-mortem examination of the body.

Small-pox.—A case of small-pox occurred on board the Forte, at Rio de Janeiro. The patient had only joined the ship from the shore about twelve or fourteen days previous to his attack, and had doubtless brought the disease with him; he had had small-pox before.

Diseases of the Brain, &c.—Three deaths occurred under this head. In one case (that of an officer of the Curaçoa, who had suffered both from secondary and tertiary syphilis, and whose constitution was completely broken down), the head symptoms had existed for some time; "he became emaciated, lost much of his hair (which also became paler), both of head and face, was soon fatigued, had occasionally a hot dry skin (more marked in the palms of the hands), suffered from severe headaches, and frequent vomiting, and finally loss of memory, and drowsiness." On the day previous to his death he was sitting up, drawing on his socks, when his servant left him. On returning he found his master lying on the deck of his cabin; he was quite unconscious, with pupils dilated, and insensible to light, stertorous breathing

ing and frothing at the mouth. He died next morning, and on post-mortem examination of the body, death was found to have been occasioned by serous effusion on the surface of the brain, at its base, and in the ventricles. Some doubts are expressed as to whether there was not a certain amount of softening at the base of the left anterior lobe.

A death resulted from intemperance on board Her Majesty's ship Forte, in which violent convulsions for some time preceded the fatal event; and a case of death from delirium tremens occurred on board the Madagascar. The man was a confirmed drunkard, who for some days previous to the fatal attack had been drinking to even a greater extent than usual.

Stomach and Bowels.—As usually occurs on this station, the cases of diarrhœa prevailed chiefly among ships stationed in the River Plate, and were in greatest number during the hot season. In the Curlew, for example, of twenty-nine cases of this affection, twenty-four were in the River Plate in the first quarter of the year, which is the summer season of that locality. In the Spy, however, the diseases occurred in the northern parts of the station, but at the same season, thirteen out of sixteen cases occurring in the first quarter.

A case of peritonitis proved fatal in the Curaçoa; the disease was induced by perforation of the posterior wall of the ileum, and consequent effusion of the contents of the intestine into the peritoneal cavity. The case occurred in the River Plate, and is rather instructive. The man had been complaining for a short time of an obscure catarrhal affection, of which no mention is made other than this incidental notice: he was suddenly seized with symptoms of acute peritonitis, under which he sank on the third day. On post-mortem examination of the body, besides other appearances, it is stated, "cavity of peritoneum full of a thin fœtid feculent smelling fluid. Nearly the entire surface of the intestines covered with a thick yellowish purulent lymph. Omentum violently inflamed, and firmly adherent to duodenum. There was a circular perforation about a quarter of an inch in diameter, on the posterior aspect of the ileum, and a small, circular perforation near it. From these openings, on raising the gut, the feculent fluid flowed rapidly, and in great quantity."

The history of this case suggests the probability that the perforation was dependent upon typhoid ulceration of the ileum. The obscure nature of the febrile symptoms, as well as

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as the insidious progress of the lesion of the intestine, are not unfrequent in this form of fever.

Diseases of Liver, &c.—A fatal case of disease of the liver occurred on board the Madagascar. The man was a confirmed drunkard, who had "chiefly lived on rum during the last twelve months of his existence." He had anasarca of the lower extremities and ascites; the face was bloated; the lower eyelids were tumid with serum; the eyes vascular and yellow; the skin clammy, and slightly sallow; mind unsettled and anxious. There was partial loss of memory; delirium tremens set in during the progress of his treatment for these symptoms; and he died on the third day after being placed on the sick list. The liver was enormously enlarged, and the kidneys in an advanced stage of granular degeneration. The urine had been highly albuminous.

Wounds, Injuries, &c.—There were two deaths from falls from aloft, and one man, a stoker, was killed by falling amongst machinery in motion, the head and thorax being completely crushed.

A seamen of the Forte was drowned. The accident occurred at Monte Video, by the man falling out of the pinnace whilst it was being hoisted up. From the strong under current which exists in the River Plate, falling overboard is a very fatal accident there.

There were eighteen deaths altogether, fourteen from diseases, and four from wounds, &c., and drowning, the former being in the ratio of 11·6 and the latter of 3·6 per 1,000 of mean force.

Invalided.—Three men were invalided for diseases connected with the cerebro-spinal system, four for diseases of the respiratory organs, two for dysentery, two for inflammation of the liver, five for diseases connected with the genito-urinary system, four for rheumatism, two for phlegmon, abscess and ulcers, two for affections classed under the head of dyspepsia and debility, four for wounds and injuries of various kinds, and two for hernia. The total number invalided was thirty-one, being in the ratio of 27·7 per 1,000 of mean force, a slight excess as compared with last year.

Table, No. 1.

Showing the Number of Cases of all Diseases and Injuries, and the Number Invalided and Dead, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever -	75	67·	- -	- -	3	2·7
Intermittent Fever - - -	21	18·8	- -	- -	1	·9
Small-pox - - - - -	1	·9	—	—	—	—
Disease of the Brain - - -	- -	- -	- -	- -	1	·9
Apoplexy - - - - -	2	1·8	- -	- -	1	·9
Epilepsy - - - - -	2	1·8	1	·9	—	—
Insanity - - - - -	1	·9	1	·9	—	—
Delirium Tremens - - -	5	4·5	- -	- -	1	·9
Headache, &c. - - - -	15	13·4	1	·9	—	—
Inflammation of the Lungs and Pleura - - - - -	11	9·8	1	·9	1	·9
Phthisis and Hæmoptysis - -	11	9·8	4	3·6	4	3·6
Influenza and Catarrh - -	110	98·2	—	—	—	—
Cynanche - - - - -	35	31·3	—	—	—	—
Functional and Organic Disease of the Heart - - - -	4	3·6	—	—	—	—
Hæmorrhoids - - - -	5	4·5	—	—	—	—
Inflammation of the Stomach and Bowels - - - - -	1	·9	- -	- -	1	·9
Dysentery - - - - -	1	·9	2	1·8	—	—
Diarrhœa - - - - -	96	85·7	—	—	—	—
Constipation and Colic - -	24	21·4	—	—	—	—
Inflammation of the Liver - -	12	10·7	2	1·8	1	·9
Jaundice - - - - -	3	2.7	—	—	—	—

Table, No. 1.—Showing the Number of Cases of all Diseases, &c.—*continued.*

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Inflammation of the Bladder and Kidneys - - - -	3	2·7	2	1·8	—	—
Syphilis - - - - -	33	29·5	—	—	—	—
Gonorrhœa - - - -	18	16·1	—	—	—	—
Orchitis - - - - -	26	23·2	1	·9	—	—
Stricture - - - - -	5	4·5	2	1·8	—	—
Rheumatism - - - -	78	69·6	4	3·6	—	—
Gout - - - - -	2	1·8	—	—	—	—
Disease of the Bones and Joints -	6	5·4	—	—	—	—
Ophthalmia - - - -	12	10·7	—	—	—	—
Otitis and Deafness - - -	2	1·8	—	—	—	—
Erysipelas - - - - - -	1	·9	—	—	—	—
Bubo (*Symp.*) - - - -	23	20·5	—	—	—	—
Phlegmon and Abscess - -	393	350·9	1	·9	—	—
Ulcer - - - - -	58	51·8	1	·9	—	—
Psora - - - - -	3	2·7	—	—	—	—
Eruptions, &c. - - - -	34	30·4	—	—	—	—
Dyspepsia and Debility - -	90	80·4	2	1·8	—	—
Scurvy - - - - -	1	·9	—	—	—	—
Dropsy - - - - -	2	1·8	—	—	—	—
Worms - - - - -	1	·9	—	—	—	—
Wounds and Injuries - - -	326	291·1	4	3·6	3	2·7
Burns and Scalds - - -	9	8·	—	—	—	—
Hernia - - - - -	2	1·8	2	1·8	—	—
Drowned - - - - -	- -	- -	- -	- -	1	·9
Total - - -	1,563	1395·5	31	27·7	18	16·1

Table, No. 2.

Showing the Number of Days' Sickness from each Disease, and from Injuries, the average Number of Men Sick Daily, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever	1,050	2·9	2·6
Intermittent Fever	129	·4	·4
Small-pox	5	—	—
Apoplexy	9	—	—
Epilepsy	31	·1	·1
Insanity	7	—	—
Delirium Tremens	33	·1	·1
Headache, &c.	86	·2	·2
Inflammation of the Lungs and Pleura	248	·7	·6
Phthisis and Hæmoptysis	618	1·7	1·5
Influenza and Catarrh	687	1·9	1·7
Cynanche	229	·6	·5
Functional and Organic Disease of the Heart	66	·2	·2
Hæmorrhoids	43	·1	·1
Inflammation of the Stomach and Bowels	3	—	—
Dysentery	9	—	—
Diarrhœa	506	1·4	1·3
Constipation and Colic	97	·3	·3
Inflammation of the Liver	166	·5	·5
Jaundice	36	·1	·1

TABLE, No. 2.—Showing the Number of Days' Sickness from each Disease, &c.—*contd.*

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Inflammation of the Bladder and Kidneys	86	·2	·2
Syphilis	1,059	2·9	2·6
Gonorrhœa	347	1·	·9
Orchitis	634	1·7	1·5
Stricture	99	·3	·3
Rheumatism	1,148	3·1	2·3
Gout	48	·1	·1
Disease of the Bones and Joints	247	·7	·6
Ophthalmia	224	·6	·5
Otitis and Deafness	11	—	—
Erysipelas	7	—	—
Bubo (*Symp.*)	597	1·6	1·4
Phlegmon and Abscess	3,336	9·1	8·1
Ulcer	1,140	3·1	2·8
Psora	4	—	—
Eruptions, &c.	341	·9	·8
Dyspepsia and Debility	670	1·8	1·6
Scurvy	7	—	—
Dropsy	59	·2	·2
Worms	2	—	—
Wounds and Injuries	3,447	9·4	8·4
Burns and Scalds	137	·4	·4
Hernia	22	·1	·1
TOTAL	17,730	48·6	43·4

TABLE, No. 3.

SHOWING the Number INVALIDED from each Ship employed on the BRAZIL Station.

CAUSE of INVALIDING.	Curaçoa.	Curlew.	Forte.	Leopard.	Madagascar.	Oberon.	Spy.	TOTAL.
Epilepsy	1	–	–	–	–	–	–	1
Insanity	–	–	1	–	–	–	–	1
Vertigo	–	–	1	–	–	–	–	1
Inflammation of the Lungs and Pleura	1	–	–	–	–	–	–	1
Phthisis and Hæmoptysis	2	2	–	–	–	–	–	4
Dysentery	1	–	–	–	1	–	–	2
Inflammation of the Liver	–	–	1	–	1	–	–	2
Albuminuria	–	–	–	–	1	1	–	2
Orchitis	–	–	1	–	–	–	–	1
Stricture	–	1	1	–	–	–	–	2
Rheumatism	–	1	1	1	–	–	1	4
Phlegmon and Abscess	–	1	–	–	–	–	–	1
Ulcer	–	–	–	–	–	–	1	1
Dyspepsia and Debility	–	–	–	–	1	–	–	1
Sarcina Ventriculi	1	–	–	–	–	–	–	1
Wounds and Injuries	–	1	–	–	–	–	3	4
Hernia	2	–	–	–	–	–	–	2
TOTAL	8	6	6	1	4	1	5	31

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TABLE, No. 4.

SHOWING the Number of DEATHS in each Ship employed on the BRAZIL Station.

CAUSE OF DEATH.	Ardent.	Buzzard.	Curaçoa.	Curlew.	Forte.	Leopard.	Madagascar.	Spy.	TOTAL.
Continued and Remittent Fever -	1	–	1	–	–	–	–	1	3
Intermittent Fever - - - -	–	–	1	–	–	–	–	–	1
Inflammation of the Brain - -	–	–	1	–	–	–	–	–	1
Apoplexy - - - - - -	–	–	–	–	1	–	–	–	1
Delirium Tremens - - - -	–	–	–	–	–	–	1	–	1
Inflammation of the Lungs and Pleura -	–	–	1	–	–	–	–	–	1
Phthisis and Hæmoptysis - -	–	1	1	1	–	1	–	–	4
Peritonitis - - - - - -	–	–	1	–	–	–	–	–	1
Inflammation of the Liver - -	–	–	–	–	–	–	1	–	1
Wounds and Injuries - - -	1	–	1	–	1	–	–	–	3
Drowned - - - - - -	–	–	–	–	1	–	–	–	1
TOTAL - - -	2	1	7	1	3	1	2	1	18

TABLE, No. 5.

SHOWING the Names of the SHIPS; the Average Complement and Mean Force of each Ship; the Total Number of Cases; the Total Number of Days' Sickness on Board; and the Average Number of Men Daily Sick.

P. O. Paid off. C. S. Station Changed.

NAME of SHIP.		Number of Guns, Horse Power, &c.			Period.	Average Complement.	Mean Force of each Ship.	Number of Cases.	Number of Days' Sickness on Board.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force of each Ship.	Number discharged to Hospital.
Ardent -	-	3	P. W.	300	year	95	95	130	1,650	4·5	47·4	1
Buzzard	P. O.	6	P. W.	300	3 mo.	150	35	48	581	1·6	45·7	1
Curaçoa -	-	31	Sc. -	350	year	330	330	393	4,927	13·5	40·9	—
Curlew -	-	9	Sc. -	60	year	90	90	141	1,701	4·7	52·2	2
Forte -	C. S.	39	Sc. -	400	6 mo.	445	220	353	3,674	10·1	45·9	3
Leopard	P. O.	18	P. W.	560	6 mo.	320	160	152	2,328	6·4	40·	4
Madagascar -	-	8	-	-	year	65	65	135	1,113	3·	46·2	—
Oberon -	-	3	P. W.	260	year	70	70	65	989	2·7	38·6	—
Spy - -	-	3	-	-	year	55	55	146	1,049	2·9	52·7	1

Table, No. 6.

Showing the Number of Cases of all Diseases and Injuries in each Ship employed on the Brazil Station.

DISEASE OR INJURY.	Ardent.	Buzzard.	Curaçoa.	Curlew.	Forte.	Leopard.	Madagascar.	Oberon.	Spy.	Total.
Continued and Remittent Fever	7	–	9	–	19	13	23	–	4	75
Intermittent Fever	–	–	3	4	7	3	1	–	3	21
Small-pox	–	–	–	–	1	–	–	–	–	1
Apoplexy	–	–	2	–	–	–	–	–	–	2
Epilepsy	–	–	2	–	–	–	–	–	–	2
Insanity	–	–	–	–	1	–	–	–	–	1
Delirium Tremens	–	–	–	–	–	–	3	1	1	5
Headache, &c.	2	1	1	–	2	–	5	–	4	15
Inflammation of the Lungs and Pleura	3	–	4	2	–	1	–	–	1	11
Phthisis and Hæmoptysis	2	1	6	2	–	–	–	–	–	11
Catarrh	21	6	24	11	16	13	5	4	10	110
Cynanche	2	3	7	2	13	4	–	2	2	35
Functional and Organic Disease of the Heart	–	1	1	–	1	1	–	–	–	4
Hæmorrhoids	2	–	–	1	–	1	–	–	1	5
Inflammation of the Stomach and Bowels	–	–	1	–	–	–	–	–	–	1
Dysentery	–	–	–	1	–	–	–	–	–	1
Diarrhœa	9	4	11	29	9	10	7	1	16	96
Constipation and Colic	1	1	3	–	11	1	4	2	1	24
Inflammation of the Liver	–	–	–	4	4	–	2	–	2	12
Jaundice	2	–	–	–	–	–	–	1	–	3
Inflammation of the Kidneys and Bladder	–	–	–	–	–	–	3	–	–	3
Syphilis	3	–	10	7	2	4	–	1	6	33
Gonorrhœa	–	–	7	3	4	1	1	2	–	18
Orchitis	2	–	12	1	3	2	3	2	1	26
Stricture	1	1	1	1	–	–	1	–	–	5
Rheumatism	6	5	25	8	10	10	2	4	8	78
Gout	–	–	–	–	–	–	2	–	–	2
Disease of the Bones and Joints	3	–	2	1	–	–	–	–	–	6
Inflammation of the Eyes	4	–	4	–	2	–	–	1	1	12
Otitis and Deafness	–	–	–	–	–	1	1	–	–	2
Erysipelas	–	–	–	–	–	–	1	–	–	1
Bubo (*Symp.*)	2	–	9	3	2	1	1	4	1	23
Phlegmon and Abscess	16	4	98	30	104	47	40	15	39	393
Ulcer	6	2	14	8	13	2	4	5	4	58
Psora	–	–	–	–	3	–	–	–	–	3
Eruptions, &c.	1	–	20	1	4	–	5	3	–	34
Dyspepsia and Debility	3	2	29	3	32	8	2	5	6	90
Dropsy	1	–	1	–	–	–	–	–	–	2
Worms	–	–	–	–	–	–	–	–	1	1
Wounds and Injuries	31	16	83	17	89	25	19	12	34	326
Burns and Scalds	–	1	2	2	1	3	–	–	–	9
Hernia	–	–	2	–	–	–	–	–	–	2
Scurvy	–	–	–	–	–	1	–	–	–	1
Total	130	48	393	141	353	152	135	65	146	1,563

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The force on the Pacific Station consisted of thirteen vessels, chiefly frigates and corvettes: besides these, there was a small detachment of seventy officers and men stationed on Vancouver's Island. The mean force of the station corrected for time was 2,650. The most unhealthy ships were the Termagant and Alert; the most healthy, the Naiad, Nereus, Tartar and Topaze. Of these, the two former are store ships, permanently stationed, the one at Callao, and the other at Valparaiso. The Tartar during the first half of the year was employed making the passage to Vancouver's Island, and was for some time stationed there: during the latter half of the year the ship was at Panama and Callao. The Topaze during nine months of the year was at Vancouver's Island. The Alert was mainly employed among the islands in the Pacific, and on the homeward bound voyage to England; and during this period the rate of sickness was for the most part owing to affections of a more or less trivial character. The Termagant was chiefly stationed at Mazatlan, San Blas and Panama. In this vessel the high rate of sickness was owing to fever principally.

The loss of service from febrile diseases was in the ratio of about 6·6 per 1,000 of mean force; from affections of the respiratory organs, 9·0; from venereal diseases, 7·7; from rheumatism, 6·; from abscesses and boils, 6·3; from ulcer, 4·1; and from wounds and injuries, 8·5. The total number of sick daily amounted to about, 172, or in the ratio of 58·9 per 1,000 of mean force.

Fever.—There were 258 cases of primary fever under treatment, six of which terminated fatally. The Alert only suffered very slightly from these diseases, six cases altogether of a very trifling character having been on the sick list. In the Bacchante there were twenty-six cases of primary fever, two of which proved fatal. The majority of these cases occurred during the last quarter of the year; but fever commenced in the month of June, and continued in the ship until the 10th of December.

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From the time of the outbreak of the fever in June until the 9th of October, the ship was at anchor in Esquimault Harbour, Vancouver's Island, and from the 9th of October to the 6th of December she was engaged making the passage to Valparaiso. The first case occurred on the 20th June, in the person of a naval cadet, who was treated on board, and discharged to duty after being thirteen days on the sick list; in this case the fever presented somewhat of a remittent type. Another naval cadet was seized on the 1st of July with marked febrile symptoms; he had been poorly for some days previously; he was discharged on the following day to the hospital at Esquimault. On the 2d July two midshipmen were placed on the list with somewhat severe febrile symptoms; one, soon showing symptoms of improvement, was retained on board, and discharged to duty on the 10th; the other, whose symptoms were more severe, was sent to hospital on the same day. The next case appeared on the 17th July; it occurred in an ordinary seaman, and from the very commencement the nervous system was seriously implicated; he "complained of vertigo so troublesome as to prevent his going about unless he had hold of something, had aching pains of his limbs, with frequent tremors, followed by flushes of heat." On the following day he was sent to hospital, where he died on the 27th, from typhoid pneumonia and pulmonary apoplexy. Following this case was that of another young officer, a master's assistant, who, having been ailing for some days, presented himself on the 22d July; he was sent to hospital on the following day, and eventually made a good recovery; his case, however, appears to have been a very severe and tedious one, lasting between six and eight weeks, and inducing much emaciation and debility. An ordinary seaman was next seized on the 1st of August; at first his symptoms appeared to be only those of catarrhal fever, from which he was recovering to all appearance satisfactorily, when, on the night of the 17th, an aggravation of all his symptoms took place, and on the morning of the 20th he was discharged to hospital. In hospital the case proved to be one of pure typhoid fever, the characteristic eruption appearing and lasting for several days, the stools being passed involuntarily, &c.: he ultimately recovered, however. From the period of this man's discharge to hospital until the 13th of September, there does not appear to have been any case of fever. On that date, however, an ordinary seaman was placed upon the sick list with fever of a severe character and adynamic type, and he was sent to hospital on the 15th. This was followed on the

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24th of the same month by an attack in the person of a midshipman, who was removed to hospital on the 26th. On the 4th of October an assistant engineer was placed on the list with fever; the symptoms were of a low character; there was bleeding from the mouth, gums, &c., and there was much diarrhœa; he made a slow recovery, being fifty-one days under treatment. On the 6th a midshipman was placed on the sick list complaining of stiff neck, debility, and loss of appetite; these were attributed to an ordinary cold, and at the end of a week (the ship having sailed for Valparaiso on the 9th) he was going about, when he suddenly felt a chill, soon followed by febrile reaction. This case proved a very urgent one, there being severe and repeated epistaxis, requiring plugging of the nose, &c., to arrest it, hæmorrhage from the mucous membrane of the gums, mouth and palate, sordes covering the teeth, and great debility and prostration, threatening a fatal termination. Under the free use of stimulants, beef tea, jellies, &c., he ultimately made a slow, tedious recovery, having been sixty-one days altogether under treatment. On the same day that this young gentleman was placed on the list, another young gentleman also came under treatment for fever, and was forty-two days on the sick list. On the 9th of October, the day of the ship's leaving Esquimault Harbour for Valparaiso, a seaman, who had been for two months in hospital with bubo, was brought on board; the wound in the groin was not healed; he was the next sufferer from fever, which he had in rather a severe form, being 57 days in all on the sick list. On the 20th the boatswain was seized, and was under treatment for twenty-eight days. On the 25th the junior officer's cook was placed on the list with fever; no particular details are given of this attack, but he was discharged to duty on the 10th of November. On the 17th of November, however, he was again entered on the sick list with well-established fever, very much debilitated, countenance pale, waxy, and indicative of suffering. On the 22d he was suddenly seized with diarrhœa, "followed by a quick small pulse (130), much abdominal tenderness, very great debility, and anxiety of countenance." At noon, on the 25th, he died, having been troubled for some time before with constant vomiting, and the prostration having become very great; the report of the post-mortem examination of the body is, unfortunately, very meagre: "We found the small intestines in part darkened, coated externally with a false membrane, easily detached, and containing some dark broken-down matter of a bilious character."

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racter." The history of this case, the short time that elapsed between the man's discharge to duty and his re-entry on the list, and the rapid setting in of symptoms of peritonitis after his second entry, lead to the conclusion that the case was one of enteric fever throughout. Unfortunately the want of minuteness in the report of the post-mortem examination of the body, deprives the case of much of the value which would have attached to it, had attention been paid to the pathognomic lesions of this disease. It can only be inferred, but the inference is a most probable one, that the peritonitis resulted from perforation of the small intestine, and effusion into the peritoneal cavity of the "broken-down matter of a bilious character."

Between the two attacks of the gun-room cook, three cases of fever were added to the list, all occurring in seamen, and under treatment twenty-three, twenty-five, and twenty-two days respectively. On the 22d of November a young officer was seized, and was fifteen days on the sick list: his case was followed on the 24th by that of a seaman, who was only eleven days under treatment. On the same day a medical officer, who had only recently joined the ship, was attacked; his case appears to have been a mild one, as he was only on the sick list six days. After this there were no more cases until the 6th of December, the day of the ship's arrival at Valparaiso, when a master's assistant was seized, and discharged to hospital, on the 9th, on which day a seaman and a midshipman, who had been attacked on the 7th, were also sent to hospital. The last case of fever which occurred on board was on the 10th of December, when a marine was placed on the sick list; he was under treatment on board for twelve days, when he was discharged to duty.

Of these twenty-six cases of fever, eleven occurred amongst officers of the gun-room—one in the person of the boatswain, whose duties keep him in constant communication with the young gentlemen; one in an engineer officer, who, if he did not mess in the gun-room, was probably frequently with the gun-room officers; one in a medical officer, whose duties would place him in constant communication with the sick; two cases in one man, the gun-room cook; eight cases occurred amongst seamen; one in a boy, and one in a marine. There is nothing to show whether any of these latter individuals were in any way connected with the gun-room officers. One gun-room officer was twice attacked; on the first occasion he was forty-two days on the sick list: three weeks after being discharged to duty, he was again placed on the list

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list with febrile symptoms, and discharged on the second day to the Naval Hospital at Valparaiso, where he only remained a very short time apparently.

Her Majesty's ship Topaze arrived at Esquimault on the 20th September, remarkably healthy, and with a sick list of only fifteen. This ship had left Vancouver's Island on the previous April for Valparaiso, reaching that port after a passage of fifty-four days. As the ship approached the equator on that occasion, the sick list rose considerably. "This period was marked by a great increase of the sick list, chronic diseases becoming acute, and organic diseases manifesting themselves; fevers dependent apparently on derangement of the secerning functions, general debility, in many cases with boils and phlegmons, skin eruptions, &c., swelling the sick list to three times the amount of its usual average." "On the 14th of May, the day of crossing the equator, the number reported on the sick list, exclusive of invalids, was forty-one; six days afterwards the number was twenty-eight, decreasing daily, till at Valparaiso, on the 15th of June, four days after arrival at that port, there were only eight on the sick list, and three at hospital." * With the exception of four cases of cynanche of a rather severe character, one, in which sloughing of the tonsils occurred, proving fatal in hospital, the ship remained healthy while at Valparaiso, the daily sick list being on several occasions down to four.

From Valparaiso the Topaze proceeded to Callao, making the passage in ten days. "During the passage to Callao the list never rose higher than twelve; and at the latter place, where no leave was given, the crew were apparently healthier than during any previous part of the commission, and the sick list never rose higher than nine, and was several times down to four. During the return passage through the tropics from Callao to Vancouver's Island the sick list showed a much more healthy state than during the passage down; and the sick list never rose higher than 18."† During this period, however, a severe and tedious case of fever, of a "gastric" type, was placed on the list, the patient being a marine officer. There was obstinate vomiting, and great irritability of the bowels in this case, and the convalescence was

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* Dr. Charles Forbes, Surgeon of Her Majesty's ship Topaze.

† Dr. Alex. Rattray, Assistant Surgeon to Her Majesty's ship Topaze.

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was lingering. A fatal case, returned as "choleraic collapse," occurred also at this time. The patient, who was a sick-berth attendant, had been ailing for a day or two. During the night previous to his death, he had been seized with severe vomiting and purging, of which he made no complaint. When seen in the morning he was found to be in a state of collapse, from which he never rallied. He died on the 31st of August. With the exception of these two cases, then, the ship was very healthy. From the time of the arrival of the ship at Esquimault, on the 20th September until the 6th October, the sick list was reduced so much as on one occasion to be only three; it averaged five or six. The following history of the invasion of fever in the Topaze is from the Journal of Dr. Rattray, the senior assistant surgeon, who has made a careful and able report of this epidemic:—"On the 7th October, however, cases of epidemic influenza began to make their appearance, resembling very much those which occurred during August and September of 1860, and during the month twenty-two cases were treated. On the same day (7th October) the *first case* of 'fever' occurred in an assistant engineer, which, proving severe, was sent to hospital, where he recovered, after a tedious illness of two months. On the 18th October the *second* occurred in a master's assistant, who was sent to hospital three days after (21st), where he recovered, after an equally tedious illness. The *third* occurred on the 21st October in a clerk's assistant, who was sent to hospital on the third day of the disease, where he died on the 23d day. The *fourth* occurred on the 23d October in an assistant engineer, who was sent to hospital on the 29th, and died there on the 25th November, of cerebral effusion during convalescence from the primary fever. The *fifth* was entered on the sick list on the 25th, the carpenter, who was sent to hospital on the 8th November, and returned to duty, after a tedious residence of forty-six days in hospital. On the 27th October the *sixth* occurred in a second-class boy, who was boatswain's servant, and who was sent to hospital on the fifth day, where he recovered, after a very severe and prolonged illness; and next day (29th October) the *seventh* made its appearance in a midshipman, who was sent to hospital seven days after, and recovered after a severe illness. On the 9th November the *eighth* occurred in a Gunner, Royal Marine Artillery, a less severe case, who was treated on board, and recovered after a tedious illness; and two days afterwards, the *ninth* and *last* severe case occurred in a second class ordinary

seaman,

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seaman, who was sent to hospital thirteen days after, where he died on the twentieth day of the disease. About the same period the gunner, another assistant engineer, a midshipman, and a lieutenant, all had slight attacks; but in all these cases the disease was comparatively trifling, and was apparently shaken off by care and the inherent strength of constitution; two of the cases, however, proved rather tedious in recovery, and had several relapses. Towards the latter end of November several slighter, but still tedious cases occurred among the men, all of which were treated on board.

"The following Table will contrast the two diseases as to numbers, results, and other evident differences:

Table 1.—To contrast the Fever and Influenza as to Numbers, Termination, &c.

Disease.	Date of		Number of Cases.	Number of		Where Treated		Result.		Average Illness.
	Commencement.	Termination.		Officers.	Men.	On Board.	Hospital.	Recovered.	Died.	
Fever	October 7	Nov. 11	9	6	3	1	8	6	3	49$\frac{1}{3}$ days.
Influenza	October 7	Dec. 22	46	3	43	46	–	46	–	7$\frac{1}{6}$ days.

Table 2.—A List of the severe Cases of Fever:

—	Name.	Age.	How disposed of.		Result.		Number of Days Ill.
1861:							
October 7	Assistant Engineer	28	Oct. 12	Hospital	Dec. 23	To duty	77
„ 18	Master's Assistant	18	Oct. 20	Hospital	Jan. 12	Duty	76
„ 21	Clerk	18	Oct. 24	Hospital	Nov. 13	Died	23
„ 23	Assistant Engineer	24	Oct. 29	Hospital	Nov. 25	Died	33
„ 25	Carpenter	29	Nov. 8	Hospital	Dec. 23	Duty	59
„ 27	First-class Boy (Boatswain's servant)	17	Nov. 1	Hospital	Jan. 13	Duty	73
„ 29	Midshipman	17	Nov. 5	Hospital	Jan. 13	Duty	76
Nov. 9	Gunner R. M. Artillery	27	Treated on board		Jan. 5	Duty	57
„ 11	First-class ordinary Seaman	21	Nov. 24	Hospital	Dec. 1	Died	20

"Of the nine above-mentioned cases of fever, eight proved very severe and tedious; the eighth case was less severe, although lingering, and the disease did not go on to so thoroughly a typhoid type, but resembled more the severe cases

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cases now alluded to, as occurring in the assistant engineer, midshipman, gunner, and the few cases of later date which occurred among the men, and which have all been classed under the head of "influenza," although they evidently partook of the same type as the more decided cases of "fever."

"All the severe cases, except the ninth, were among the junior officers, and others living in the steerage, which seems to point to that as the focus of the disease: the later and slighter cases prevailed among the men.

"Of the eight severe cases which were sent to hospital, five recovered, after a severe illness and a prolonged residence in hospital. One of the three deaths resulted from the sequelæ of the fever (cerebral effusion) on the thirty-third day of the disease; the other two deaths occurred during the fever itself on the twentieth and twenty-third day of the disease."

The Mutine arrived at Esquimault on the 23d of August, and remained there until the 9th of October, when she proceeded to sea in company with the Bacchante. During the period included between the 1st of October and the 31st of December, seven cases of "continued fever" came on the sick list in this ship, one of which proved fatal. The first cases which presented themselves were in the captain's steward, and an officer, who both came on the list on the 10th of October, the day after the ship had gone to sea. The steward was twenty-eight days on the sick list, and the officer twelve, when they were discharged to duty. On the 22d of October a stoker was placed on the list with "continued fever," and was sixty days under treatment; he was discharged to duty, the next case was a corporal of marine artillery, who was discharged cured, after being sixty-eight days on the sick list. There was no other case after this until the 6th of December, when the ship was at Mazatlan: on that day a seaman was placed on the sick list with continued fever, and was under treatment for forty-three days. On the following day a stoker was placed on the list, and died on the tenth day. The last case occurred on the 8th, when an ordinary seaman was placed on the list with fever, and was forty-nine days under treatment. No details whatever are given in any of the returns from the Mutine with regard to these cases of fever, excepting in the case which proved fatal, and even in this instance the report is very meagre: it states that the man presented himself with premonitory symptoms of fever: he had been engaged for some days previously as a pinnace-man in watering the ship from an

adjacent

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adjacent island, and in consequence a good deal exposed to the sun. On the day following his admission to the list the symptoms were aggravated, and the man was very desponding. No abdominal nor pulmonary complaint could be detected. "From this date he appeared to do pretty well till the 15th, when low typhoid symptoms set in. There was great prostration of strength, and a corresponding depression of spirits; the skin was cold and clammy at times, and the pulse became weak and small; his evacuations were healthy, regular." Symptoms of coma appear to have set in on the 16th, and on the following day he died: there was no post-mortem examination of the body. This case and two others are attributed by the surgeon to exposure to the sun whilst watering at the Island of Ventado, some four miles from Mazatlan; but of the nature of the first four cases we have no information whatever; for any practical purposes, therefore, as regards this outbreak of fever at Esquimault, the Mutine may be put to one side, merely remarking that from the sick list itself we derive the information, that these four cases gave an average to each of forty-two days' sickness.

This outbreak of fever in the Bacchante and Topaze naturally excited a good deal of interest; for, apart from the severity of the cases, themselves; it was felt to reflect upon a locality which enjoyed the reputation of being peculiarly healthy. It would appear, however, from the report of Dr. Forbes, the surgeon of the Topaze, that sporadic cases of fever were occurring on shore. The surgeon of the Bacchante (Dr. Allan Brown) states, indeed, that no such fever existed on shore. The assistant surgeon of the Topaze also states, "This fever is not known on shore, and had not previously appeared in the colony until its first outbreak in the Bacchante and Topaze." Dr. Forbes, however, in stating his objection to the theory that the disease had a contagious origin, says, that "sporadic cases of fever were at this time occurring on shore in individuals who had not been subjected to any known or contagious influence." However this may be, it is unquestionable that at Esquimault, in the month of June, fever of a specific type made its appearance on board the Bacchante, and continued to prevail in that ship to a greater or less extent until the month of December; and that on the arrival of the Topaze at Esquimault cases of a severe nature also appeared in that ship shortly after her arrival.

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The characteristic features of the fever are thus stated by the surgeon of the Bacchante: "In its character it differed very much, some cases being so mild as to resemble influenza, dyspepsia, or mild rheumatism, the functions of digestion alone appearing at fault; those of the skin and circulation were little, if at all, affected, but a peculiar odour from the breath or body of the patient, was often the first decided means of diagnosing it. There were, however, many exceptions to this rule; in some, well-marked febrile symptoms set in at first, and ran a regular course, ending favourably; in others, typhoid symptoms supervened in the form of prostration, dark, red, beefy tongue, and in a few instances hæmorrhage (but no petechiæ were observed), severe according to the violence of the muco-enteric complication, which appeared sometimes early, but generally late in the disease. But what was still more strange is, that the very mild, equally with the well-marked febrile attack, would take on this typhoid form, showing the uncertainty of its nature, and the necessity of watching it." Dr. Turnbull, the junior assistant surgeon of the Topaze, says, "commencing in most cases as influenza in the majority of cases on board the Topaze, they soon developed themselves into continued fever, in some head symptoms predominating, 'typhus:' the majority of cases, however, were accompanied by intestinal symptoms, 'typhoid;' in others, the two affections appeared to be combined, the diarrhœa, and rose-coloured rash of typhoid being accompanied by delirium, and the other peculiar symptoms of typhus fever; the cases giving rise to great doubts as to the possibility of, in all cases, distinguishing the one affection from the other by the rash, or the 'pea-soup stools;' in fact, to their being two perfectly distinct fevers." Dr. Rattray says, "In several of the severe cases of fever, the disease apparently commenced as influenza, with remitting pyrexia, catarrhal symptoms, or cynanche; after a few days the symptoms became more abdominal, with coated tongue, diarrhœa, vomiting, followed more or less speedily by continued fever, with typhoid symptoms, *e.g.*, dry, hard, coated tongue, sordes on lips or teeth, pink flushing of the face, dry hot skin, muttering delirium, occasionally violent delirium, with more or less rapid emaciation."

The medical officers differ exceedingly in their views as to the origin of the fever, and the cause of its localisation amongst the junior officers.

The surgeon of the Bacchante having before him the considerations

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siderations that no such fever had ever existed on shore, that squadrons had occasionally assembled at Esquimault in considerable force without being affected with the disease, and that the testimony of all the residents was in favour of the extreme healthiness of the place, was driven to look for its cause in some local ship poison. A series of sanitary inspections of the decks, and all places "on and beneath them," was made, and as the young officers were the principal sufferers, the gun-room, pantry, steward's berth, lockers, &c., were all cleared out and cleaned, the young gentlemen living on the main deck in the meanwhile. A little water which was found to have lodged in some shot-racks was dried up, the lockers were relaid upon a thick layer of white lead; but this failing to keep them dry and sweet, they were removed altogether. The same proceeding was taken with some bag-racks, the removal of which left the deck clear to the ship's side. "The decks, the engineers' mess-place, bath-house, all the store-rooms throughout the ship, the holds, wings, bilges, screw alley, in short all places likely to be foul, dirty, or contain matter exposed to decomposition were cleared out, cleaned, and regularly inspected." These measures, however, failed to remove the disease from the young officers, who were a second time made to reside on the main deck while their mess-place was subjected to another purification. On the arrival of the ship at Valparaiso, moreover, all the coal was removed from the ship, the bunkers cleared, cleaned, and ventilated, and in these, as in all previous operations, chloride of zinc abundantly used. Excepting, however, the lodgment of water found under the shot and bag-racks previously noticed, nothing particularly faulty was found in the ship. The sanitary measures thus adopted left "the lower deck and parts beneath them as free as possible from everything calculated to produce disease. Indeed, the bilges, screw alley, stokehole, and the parts where the foul emanations frequently originate, are, and have been, remarkably sweet." The disease, nevertheless, continued to find fresh victims up to the 7th of December, neither being checked by their departure from Esquimault, by the measures taken to insure the utmost cleanliness of the ship, nor by a voyage across the tropics. In conclusion, the surgeon of the Bacchante states that the failure of these measures to check the disease afford grounds for the belief that, however it may have been originally induced, its continuance in the ship was due to contagion or infection.

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With regard to the introduction of the fever into the Topaze, its localization amongst the junior officers, and its specific character, and mode of propagation, the medical officers of that ship differ very much in opinion. It is to be observed, that previous to the inroad of this severe type of fever, a slight epidemic of influenza was prevailing amongst the ship's company. The surgeon says, that the experience of a former year, and the change of season, naturally led to the expectation of some catarrhal affections. "But when fever of determinate form began to show itself in one particular part of the ship, the subject became one of great interest, seeing that the same part of the ship, the steerage, was in like manner affected on board another ship of the same class lying at anchor close to, and in which ship fever had prevailed for some months. There had been, of course, constant communication between the two ships; and in the first case which occurred on board this ship the patient (an assistant engineer) had dined on board in the steerage of the Bacchante the day before being taken ill, but there was not the slightest suspicion of the possibility of contagion existing at the time." He proceeds to show how fever of a specific typhoid character spread amongst the junior officers, and, taking into consideration that influenza existed epidemically amongst the ship's company, sees no difficulty in imagining these cases to be simply exaggerated forms of the prevailing epidemic. "The difficulty lies in accounting for its marked development in the steerage." To the question put by himself whether the fever could have been generated by any pythogenic agency in the ship, he says that no such cause could be made out. "Everywhere the ship was thoroughly clean, sweet and dry. The tanks had been got up in the spring, holds clean swept, the chlorides of lime and zinc used liberally, and fires kept burning in the screw alley when any damp or smell of bilge water appeared, and an occasional smell of bilge water will be apparent in every ship, in spite of all that can be done. Here there was no pythogenic cause, and the question can only be answered in the negative." He states, moreover, that none of the ward-room officers, three of whom had cabins in the steerage, were affected. In answer to the question whether the disease had a contagious origin, he says that there is nothing to show that the fever in the Bacchante was contagious. A proof that it was not so, he considers to be the fact that it did not spread along her lower deck, and he is the more confirmed in this opinion that "sporadic cases of fever

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were at this time occurring on shore in individuals who had not been subjected to any known contagious influence."

The senior assistant surgeon, who, as has been stated above, has made a very elaborate report upon this epidemic, is also of opinion that the fever was not of contagious nor infectious character, nor does he believe that it was derived from the Bacchante. He says, "No doubt the fevers were either identical, or at least greatly resembled each other, but that in the Topaze did not appear until that of the Bacchante had entirely disappeared.* The fact that the Topaze fever prevailed chiefly among the junior officers, who were frequently on board the Bacchante, and mingled freely with their brother officers, who were those principally affected in her case, does not prove that the Topaze fever was the result of infection or contagion, but appears to point to the disease in both ships having its origin in or near the same part of the ship, having probably arisen from the same ship poison, whatever its nature, and wherever its origin." That the disease was not of climatic origin he believes, from the fact that the fever was not known on shore until its first outbreak in the Bacchante and Topaze; that in the Bacchante it occurred during dry, summer weather, and in the Topaze during the dull, damp, foggy weather of autumn, and that the salubrity of Vancouver's Island, and its freedom from any epidemics, excepting those of slight influenza, had been thoroughly established. The information which subsequently reached him, that this fever had again made its appearance in the Bacchante on her passage to Valparaiso, and continued to prevail amongst the junior officers in the steerage, only confirms him in the belief "that the fever was in no case purely climatic; or why its continued localization in the steerage?" that it was an independent disease, and not simply aggravated influenza, and he concludes with the following remarks: "The history of this fever is thus exceedingly interesting. It is evidently not purely climatic, although climate possibly originates it in many cases, otherwise predisposed to it. There is nothing in the form or economy of the Topaze or Bacchante which can account for it. It is evidently localized *in* or *near* the steerage; and some lurking, subtle ship poison generated in the ship's lining or elsewhere, both in the Topaze and Bacchante appears to be the only clue

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* This is a mistake.

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clue to the solution of the mystery, although *what* it is, or *where* it is, are questions we cannot yet solve."

There is nothing in the records of naval medicine to show that a ship poison, whatever that may mean, produces enteric fever; neither has that fever in its general history ever been associated with ligneous decomposition. In the vast proportion of cases it appears to be the product of putrefying animal matter, and there can be little doubt that epidemics of this fever occurring in towns, have almost always been traceable to sewer emanations. From whatever source derived, however, it is almost universally admitted, that the fever is communicable from one person to another. There are differences of opinion with regard to the degree of its communicability, the preponderating evidence going to prove that it is only so to a very limited extent. There could not possibly, however, be conditions better fitted for the spread of disease of a limited communicable character than were afforded by the localities in which this fever made its appearance in the Bacchante and Topaze. The gun rooms of these ships, like the gun rooms of all frigates of their class, are mere narrow berths or mess places in the steerage, the light and air being admitted by scuttles in the ship's side, and by the doors which open on the steerage. In this mess place are crowded, it may be, from fifteen to twenty young officers, who sit literally shoulder to shoulder. It will be evident that if disease of an infectious character makes its appearance amongst these young officers, however weak its infecting power may be, or limited the area over which it can pass, it is in the very best possible circumstances for exerting its poisonous qualities. In the present instance the fever was almost entirely confined to the members of the midshipman's mess, or to those who were in constant communication with them. So long as they remained together, no cleansing of the mess place or of the steerage could have any effect in removing the disease. They carried it about among themselves, and this is admirably shown by the fact that the disease did not appear in the ward room, which is in the after part of the steerage, and that none of the wardroom officers even who had cabins in the steerage contracted the disease. There appears every reason to believe that the disease was true enteric fever, that it appeared first in the Bacchante, that from the Bacchante it was propagated to the Topaze, and that in both of these ships it was continued by infection from one person to another.

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A very large number of cases of fever were under treatment in the Termagant, which ship was during the whole year stationed at Mazatlan, San Blas, and Panama. The cases were not, however, of a serious character. Their duration was from nine to sixteen days, and no mortality occurred from them.

Inflammation of the Lungs and Pleura.—A case of pneumonia proved fatal in the Calypso. Phthisis proved fatal to an ordinary seaman of the Clio, in hospital; and a boy belonging to the Topaze died from sloughing sore throat in the Naval Hospital at Valparaiso. Four men were invalided for inflammatory affections of the lungs and pleura, and nineteen for phthisis and hæmoptysis.

Diseases of the Kidneys, Bladder, &c.—Primary syphilis was not so frequent as in the previous year, the difference in the ratio per 1,000, being as 45·7 to 52·2. As formerly, the majority of the cases were contracted at Vancouver's Island. Thirteen men were invalided for diseases coming under this head; three for inflammation of the kidneys and bladder, five for syphilis, and five for stricture.

Wounds, &c.—One man was killed by falling from aloft; an officer died from injuries sustained by a fall from his horse, and another officer was accidentally killed by a gun-shot wound. Two men were drowned, one by falling overboard, the other by being washed overboard in a gale of wind. Two men were murdered at Esquimault, one being shot by a resident of the place, the other having had his throat cut by some Indians. Total deaths from wounds and injuries, and drowning, seven, being in the ratio of 2·6 per 1,000 of mean force.

Invalided.—Four cases of ague were invalided; ten of diseases of the brain and nerves, nine of which were cases of epilepsy; twenty-three cases of diseases of the organs of respiration, nineteen of which were phthisical; twelve of diseases connected with the circulatory system; one of hæmatemesis; one of dysentery; two of diarrhœa; two of inflammation of the liver; thirteen of diseases of the genito-urinary organs; nine of rheumatism and disease of the bones and

and joints; one of ophthalmic disease; one of scrofula; three of diseases of the skin and sub-cutaneous cellular tissue; three of dyspepsia and debility; six of wounds, injuries, &c., and five of hernia. Total number invalided ninety-six, being in the ratio of 36·2 per 1,000 of mean force.

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TABLE, No. 1.

SHOWING the Number of CASES of all DISEASES and INJURIES, and the Number INVALIDED and DEAD, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever -	258	97·4	- -	- -	6	2·3
Intermittent Fever - - -	67	25·3	4	1·5	—	—
Measles - - - - -	1	·4	—	—	—	—
Epilepsy - - - - -	16	6·	7	2·6	—	—
Paralysis - - - - -	3	1·1	1	·4	—	—
Insanity - - - - -	4	1·5	2	·8	—	—
Delirium Tremens - - -	4	1·5	—	—	—	—
Headache, &c. - - - -	19	7·2	—	—	—	—
Inflammation of the Lungs and Pleura - - - - -	37	14·	4	1·5	1	·4
Phthisis and Hæmoptysis - -	22	8·3	19	7·2	1	·4
Influenza and Catarrh - -	465	175·5	—	—	—	—
Cynanche - - - - -	94	35·5	- -	- -	1	·4
Asthma - - - - -	11	4·2	—	—	—	—
Functional and Organic Disease of the Heart - - - -	26	9·8	10	3·8	2	·8
Hæmorrhoids - - - -	12	4·5	1	·4	—	—
Varix - - - - -	3	1·1	1	·4	—	—
Inflammation of the Stomach and Bowels - - - - -	2	·8	1	·4	1	·4
Dysentery - - - - -	6	2·3	1	·4	—	—
Diarrhœa - - - - -	232	87 5	2	·8	—	—
Cholera - - - - -	- -	- -	- -	- -	1	·4
Constipation and Colic - -	58	21·9	—	—	—	—
Inflammation of the Liver - -	20	7·5	2	·8	—	—
Inflammation of the Bladder and Kidneys - - - -	5	1 9	3	1·1	—	—
Syphilis - - - - -	121	45·7	5	1·9	—	—
Gonorrhœa - - - -	54	20·4	—	—	—	—
Orchitis - - - - -	30	11·3	—	—	—	—
Stricture - - - - -	14	5·3	5	1·9	—	—
Incontinence of Urine, &c. - -	2	·8	—	—	—	—

Table, No. 1.—Showing the Number of Cases of all Diseases, &c.—*continued.*

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Rheumatism - - - - -	325	122·6	7	2·6	—	—
Gout - - - - - - -	1	·4	—	—	—	—
Disease of the Bones and Joints -	17	6·4	2	·8	—	—
Ophthalmia - - - - -	39	14·7	1	·4	—	—
Amaurosis and Cataract - -	1	·4	—	—	—	—
Otitis and Deafness - - -	11	4·2	—	—	—	—
Erysipelas - - - - - -	1	·4	- -	- -	1	·4
Scrofula - - - - - -	6	2·3	1	·4	—	—
Bubo (*Symp.*) - - - -	75	28·3	—	—	—	—
Phlegmon and Abscess - -	745	281·1	1	·4	—	—
Ulcer - - - - - -	192	72·5	—	—	—	—
Psora - - - - - -	10	3·8	1	·4	—	—
Eruptions, &c. - - - -	44	16·6	1	·4	—	—
Dyspepsia and Debility - -	125	47·2	3	1·1	—	—
Scurvy - - - - - -	1	·4	—	—	—	—
Dropsy - - - - - -	2	·8	—	—	—	—
Worms - - - - - -	4	1·5	—	—	—	—
Purpura - - - - - -	1	·4	—	—	—	—
Wounds and Injuries - - - -	740	279·2	6	2·3	3	1·1
Burns and Scalds - - - -	31	11·7	—	—	—	—
Hernia - - - - - -	9	3·4	5	1·9	—	—
Drowned - - - - - -	- -	- -	- -	- -	2	·8
Murdered - - - - - -	- -	- -	- -	- -	2	·8
Total - - -	3,966	1496·6	96	36·2	21	7·9

TABLE, No. 2.

SHOWING the Number of DAYS' SICKNESS from each DISEASE, and from INJURIES, the Average Number of Men Sick Daily, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever	4,368	959	5,327	14·6	5·5
Intermittent Fever - - -	1,015	- -	1,015	2·8	1·1
Measles - - - - -	27	- -	27	·1	—
Disease of the Brain - -	- -	138	138	·4	·2
Epilepsy - - - -	251	- -	251	·7	·3
Paralysis - - - -	94	- -	94	·3	·1
Insanity - - - - -	25	166	191	·5	·2
Delirium Tremens - - -	17	- -	17	—	—
Headache, &c. - - -	187	- -	187	·5	·2
Inflammation of the Lungs and Pleura - - - -	957	119	1,076	2·9	1·1
Phthisis and Hæmoptysis -	713	514	1,227	3·3	1·2
Influenza and Catarrh - -	5,334	298	5,632	15·4	5·8
Cynanche - - - -	648	91	739	2·	·8
Asthma - - - - -	84	- -	84	·2	·1
Functional and Organic Disease of the Heart - - -	621	131	752	2·1	·8
Hæmorrhoids - - -	218	- -	218	·6	·2
Varix - - - - -	77	- -	77	·2	·1
Inflammation of the Stomach and Bowels - - -	52	- -	52	·2	·1
Dysentery - - - -	83	- -	83	·2	·1
Diarrhœa - - - -	1,745	151	1,896	5·2	2·
Constipation and Colic - -	347	- -	347	·9	·3
Inflammation of the Liver -	254	109	363	·9	·3

TABLE, No. 2.—Showing the Number of Days' Sickness from each Disease, &c.—*contd*.

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Inflammation of the Bladder and Kidneys - - -	129	173	302	·8	·3
Syphilis - - - - -	3,112	1,359	4,471	12·2	4·6
Gonorrhœa - - - - -	1,158	71	1,229	3·3	1·2
Orchitis - - - - -	729	28	757	2·1	·8
Stricture - - - - -	433	235	668	1·8	·7
Incontinence of Urine, &c. -	103	- -	103	·3	·1
Rheumatism - - - - -	5,261	502	5,763	15·8	6·
Gout - - - - - -	2	- -	2	—	—
Disease of the Bones and Joints	418	188	606	1·6	·6
Ophthalmia - - - - -	344	38	382	1·1	·4
Amaurosis and Cataract - -	7	- -	7	—	—
Otitis and Deafness - -	150	- -	150	·4	·2
Erysipelas - - - - -	62	94	156	·4	·2
Scrofula - - - - - -	302	- -	302	·8	·3
Bubo (*Symp.*) - - -	1,520	201	1,721	4·7	1·8
Phlegmon and Abscess - -	6,107	41	6,148	16·8	6·3
Ulcer - - - - - -	3,627	368	3,995	10·9	4·1
Psora - - - - - -	214	- -	214	·6	·2
Eruptions, &c. - - -	419	178	597	1·6	·6
Dyspepsia and Debility - -	871	- -	871	2·4	·9
Scurvy - - - - - -	25	- -	25	·1	—
Dropsy - - - - - -	22	11	33	·1	—
Worms - - - - - -	34	- -	34	·1	—
Purpura - - - - - -	2	- -	2	—	—
Wounds and Injuries - -	7,975	251	8,226	22·5	8·5
Burns and Scalds - - -	261	- -	261	·7	·3
Hernia - - - - - -	165	- -	165	·5	·2
TOTAL - - -	50,569	6,414	56,983	156·1	58·9

Table, No. 3.

Showing the Number Invalided from each Ship employed on the Pacific Station.

CAUSE of INVALIDING.	Alert.	Bacchante.	Calypso.	Clio.	Forward.*	Grappler.*	Hecate.	Marine Detachment, Vancouver's Island.	Mutine.	Naiad.	Plumper.	Pylades.	Tartar.	Termagant.	Topaze.	Total.
Intermittent Fever	–	–	–	4	–	–	–	–	–	–	–	–	–	–	–	4
Epilepsy	–	–	–	2	1	–	1	–	–	1	–	–	1	1	1	7
Paralysis	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1
Insanity	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	2
Inflammation of the Lungs and Pleura	–	2	–	1	–	–	1	–	–	–	–	–	–	–	–	4
Phthisis and Hæmoptysis	1	6	1	1	–	–	–	–	–	–	–	–	3	4	3	19
Functional and Organic Disease of the Heart	–	1	2	–	–	–	–	–	–	–	–	1	–	2	4	10
Hæmorrhoids	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1
Varicocele	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1
Hæmatemesis	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1
Dysentery	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1
Diarrhœa	–	–	–	–	–	–	–	–	1	–	–	–	–	1	–	2
Inflammation of the Liver	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	2
Inflammation of the Kidneys and Bladder	–	–	–	1	–	–	–	–	1	–	–	–	–	–	1	3
Syphilis	–	–	–	–	–	1	–	1	–	–	–	1	2	–	–	5
Stricture	–	–	–	1	1	–	–	–	1	–	–	2	–	–	–	5
Rheumatism	–	–	1	–	–	–	–	–	4	–	–	–	–	1	1	7
Disease of the Bones and Joints	–	–	–	–	1	–	–	–	–	–	–	1	–	–	–	2
Inflammation of the Eyes	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Scrofula	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	1
Phlegmon and Abscess	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1
Psora	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1
Eruptions, &c.	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	1
Dyspepsia and Debility	–	–	–	–	–	–	–	–	–	–	–	2	–	1	–	3
Wounds and Injuries	–	1	–	1	1	1	–	1	–	–	1	–	–	–	–	6
Hernia	–	–	1	–	–	–	–	–	1	–	–	1	–	1	1	5
Total	1	12	6	14	3	2	3	2	9	2	1	9	7	11	14	96

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* The Forward and the Grappler having no medical officer in charge, no returns of the sickness of their crews have been received.

TABLE, No. 4.

SHOWING the Number of DEATHS in each Ship employed on the PACIFIC Station.

CAUSE OF DEATH.	Bacchante.	Calypso.	Clio.	Forward.	Mutine.	Plumper.	Pylades.	Tartar.	Topaze.	TOTAL
Continued and Remittent Fever	2	–	–	–	1	–	–	–	3	6
Inflammation of the Lungs and Pleura	–	1	–	–	–	–	–	–	–	1
Phthisis	–	–	1	–	–	–	–	–	–	1
Cynanche Maligna	–	–	–	–	–	–	–	–	1	1
Organic Disease of the Heart	1	–	–	–	–	–	–		1	2
Inflammation of the Bowels	–	–	–	–	–	–	1	–	–	1
Cholera	–	–	–	–	–	–	–	–	1	1
Erysipelas	–	1	–	–	–	–	–	–	–	1
Wounds and Injuries	–	–	–	1	1	–	–	–	1	3
Drowned	1	–	–	–	–	–	–	1	–	2
Murdered	–	–	–	–	–	1	–	–	1	2
TOTAL	4	2	1	1	2	1	1	1	7	21

TABLE, No. 5.

SHOWING the Names of the SHIPS; the Average Complement and Mean Force of each Ship; the Total Number of Cases; the Total Number of Days' Sickness on Board; and the Average Number of Men Daily Sick.

P. O. Paid off. D. Returns Defective.

NAME of SHIP.	Number of Guns, Horse Power, &c.	Period.	Average Complement.	Mean Force of each Ship.	Number of Cases.	Total Number of Days' Sickness on Board.	Average Number of Men Daily Sick.	Ratio per 1,000 of Mean Force of each Ship.	Number discharged to Hospital.
Alert - - P.O.	17 Sc. 100	9 mo.	150	110	204	4,268	11·7	106·4	4
Bacchante - -	39 Sc. 600	year	530	530	671	6,088	16·6	31·3	48
Calypso - - -	18 - -	year	170	170	287	3,091	8·5	50·	2
Clio - - -	22 Sc. 400	year	270	270	471	6,336	17·4	64·4	–
Hecate - - -	6 P. W. 240	year	120	120	157	2,100	5·8	48·3	7
Marine Detachment, Vancouver's Island - - -	-	year	70	70	87	1,426	3·9	55·7	7
Mutine - - -	17 Sc. 200	year	150	150	219	2,862	7·8	52·	3
Naiad - - D.	6 - -	8 mo.	25	15	14	113	·3	20·	–
Nereus - - -	6 - -	year	30	30	24	254	·7	23·3	2
Plumper - P. O.	12 Sc. 60	6 mo.	90	45	59	547	1·5	33·3	4
Pylades - - P. O.	21 Sc. 350	7 mo.	245	140	289	3,943	10·8	77·1	17
Tartar - - -	20 Sc. 250	year	270	270	299	3,648	10·	37·	4
Termagant - -	25 Sc. 310	year	260	260	717	10,848	29·7	114·2	–
Topaze - - -	39 Sc. 600	year	470	470	468	5,360	14·7	31·3	40

TABLE, No. 6.

SHOWING the Number of Cases of all DISEASES and INJURIES in each Ship on the PACIFIC STATION.

DISEASE OR INJURY.	Alert.	Bacchante.	Calypso.	Clio.	Hecate.	Marine Detachment, Vancouver's Island.	Mutine.	Naiad.	Nereus.	Plumper.	Pylades.	Tartar.	Termagant.	Topaze.	TOTAL.
Continued and Remittent Fever	6	26	1	7	4	–	13	3	–	–	28	7	141	22	258
Intermittent Fever	–	1	1	49	6	–	5	1	2	–	–	1	–	1	67
Measles	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Epilepsy	–	1	–	2	2	–	–	2	–	–	–	1	6	2	16
Insanity	–	2	–	–	–	–	–	–	–	1	–	–	–	1	4
Delirium Tremens	–	–	–	–	2	–	–	1	–	–	–	1	–	–	4
Paralysis	–	–	2	–	–	–	–	–	–	–	–	–	–	1	3
Headache, &c.	2	1	3	3	–	–	3	–	–	–	–	–	1	6	19
Inflammation of the Lungs and Pleura	2	9	3	1	9	–	–	1	2	1	1	2	6	–	37
Phthisis and Hæmoptysis	–	5	1	1	–	–	–	–	–	1	2	2	7	3	22
Catarrh	33	71	38	13	21	7	12	1	1	2	25	29	106	106	465
Cynanche	3	18	6	4	7	–	4	–	–	–	8	4	10	30	94
Asthma	–	–	2	7	–	–	1	–	–	–	–	1	–	–	11
Functional and Organic Disease of the Heart	–	7	3	3	–	–	–	–	–	–	–	–	6	7	26
Hæmorrhoids	1	1	–	2	1	–	2	–	–	–	–	1	3	1	12
Varix	–	–	1	–	–	–	–	–	–	–	1	–	–	1	3
Inflammation of the Stomach and Bowels	–	–	–	–	–	–	–	–	1	–	–	–	–	1	2
Dysentery	–	2	–	1	1	–	–	–	–	–	–	–	1	1	6
Diarrhœa	22	22	23	41	6	8	9	1	–	7	28	8	46	11	232
Constipation and Colic	8	–	9	3	2	1	4	1	1	–	17	3	7	2	58
Inflammation of the Liver	–	–	2	–	–	–	1	–	–	–	–	3	7	7	20
Inflammation of the Kidneys and Bladder	–	–	–	–	–	–	–	–	–	–	–	–	3	2	5
Syphilis	5	20	10	4	15	11	4	–	2	1	10	8	13	18	121
Gonorrhœa	5	1	2	6	2	13	–	–	–	2	15	–	3	5	54
Orchitis	1	8	1	8	1	1	2	–	–	1	–	–	3	4	30
Stricture	1	2	2	2	1	1	1	–	–	–	2	–	2	–	14
Incontinence of Urine, &c.	–	–	–	–	–	–	–	–	–	–	–	–	2	–	2
Rheumatism	25	68	18	65	5	7	9	–	2	3	18	16	41	48	325
Gout	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1
Disease of the Bones and Joints	2	–	–	3	–	–	1	–	–	–	2	1	4	4	17
Inflammation of the Eyes	3	8	1	–	–	–	1	–	–	2	4	4	14	2	39
Amaurosis and Cataract	–	–	–	1	–	–	–	–	–	–	–	–	–	–	1
Otitis and Deafness	–	2	2	1	1	1	–	–	–	–	1	–	3	–	11
Erysipelas	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1
Scrofula	–	–	–	–	–	–	–	–	–	–	–	3	3	–	6
Bubo (*Symp.*)	4	11	1	6	1	6	8	–	–	2	4	6	5	21	75
Phlegmon and Abscess	37	157	75	89	28	9	61	1	–	18	39	88	103	40	745
Ulcer	6	47	14	19	4	2	15	–	1	5	21	22	21	15	192
Psora	–	4	–	4	2	–	–	–	–	–	–	–	–	–	10
Eruptions, &c.	1	1	4	9	1	1	3	2	–	1	3	5	9	4	44
Dyspepsia and Debility	1	25	13	16	7	2	11	–	2	2	12	11	6	17	125
Dropsy	1	–	–	1	–	–	–	–	–	–	–	–	–	–	2
Worms	–	–	–	4	–	–	–	–	–	–	–	–	–	–	4
Wounds and Injuries	33	148	46	89	28	17	42	–	9	8	42	68	129	81	740
Burns and Scalds	–	3	1	7	–	–	4	–	–	2	2	4	4	4	31
Hernia	1	–	2	–	–	–	3	–	–	–	2	–	1	–	9
Scurvy	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1
Purpura	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
TOTAL	204	671	287	471	157	87	219	14	24	59	289	299	717	468	3,966

WEST COAST OF AFRICA.

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The squadron on the West Coast of Africa during this year consisted of nineteen vessels, of various sizes. The mean force corrected for time was 2,050. The total number of cases of disease and injuries under treatment was 3,839, of which seventy-eight were invalided, and sixty-seven had a fatal termination. The healthiest ships were the Wye, Sharpshooter, Buffalo, and Forte. The most sickly ship was the Prometheus. The Brune, as noted in last year's Report may be looked upon as altogether an exceptional ship, from the pecular nature of her duties. The Bloodhound and the Torch had also a more than usual large rate of sickness, from the prevalence of fever in these ships.

Of the ships that are noted as being healthiest, the Wye, a steam store ship, arrived on the station on the 17th September, on which date she reached Ascension from Rio de Janeiro. After taking in provisions for the squadron on the Coast, she proceeded to Sierra Leone, and, after remaining there a few days, coasted to the southwards, supplying provisions to the various cruisers as she fell in with them. Arriving at Lagos on the 2d of November, she only remained there a few days, when she proceeded onwards to Fernando Po. From Fernando Po, after coaling, she continued her southward cruise until she reached St. Paul de Loando, where she remained at anchor from the 28th November to the 19th of December, when she left for Ascension, and was at sea on the last day of the year. The Sharpshooter left the Coast of Africa for England in May; during the early part of the year she was employed on the southern part of the station. On two occasions during which she was stationed in the River Congo, a few cases of fever occurred amongst the men, but otherwise she was very healthy.

The healthy condition of the Buffalo, in so far as climatic disease is concerned, is attributed by the medical officer in charge to the influence of quinine, which was regularly administered when the ship was in unhealthy localities. He says, "While at Sierra Leone, Fernando Po, in the River Congo,

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Congo, and on the beach at St. Paul de Loando, I administered daily one ounce of quinine wine to each of the white men of this ship's company. I believe it has been attended with much benefit, as no case of fever occurred amongst the men, although they have been obliged, from the nature of the ship's duties, to work hard, and be exposed to the sun in the above unhealthy place; and while ships lying adjacent to us were contracting fever, we remained healthy."

The Forte, the flag ship of the station, during the short time she was employed in conveying the Commander in Chief over this portion of his command, seldom remained more than a day or two at any one place; and the few cases of climatic disease she had were of a very mild nature.

The Prometheus had a very large amount of sickness of a climatic character, contracted almost entirely by long-continued river service: in other respects she was not an unhealthy ship: during the quarter of the year when she had the largest amount of sickness, she was at anchor in the Lagos River.

The daily loss of service from febrile diseases was thirty-five men, equal to about 17 per 1,000 of mean force; from diseases of the brain and nervous system ·8 per 1,000; of the organs of respiration 4, and of the digestive organs about 2·6. From hepatic affections the loss was almost nothing; it was about ·3; from venereal diseases the loss was 2·9; from rheumatism 3·3. Phlegmon, abscess and ulcer, as usual, formed large items in the loss of service, the total daily number sick from these diseases being about 13·4 per 1,000, and wounds, injuries, &c. entailed a loss of 11 per 1,000. The total daily number sick was 127·2, being in the ratio of 62·0 per 1,000 of mean force.

Fevers.—There were seventy-two cases of primary fever in the Alecto, sixty-nine of these being contracted during the Midsummer quarter, in the months of May and June. In the first quarter of the year the ship was employed cruising in the Bights of Benin, and visited Ascension, Fernando Po, and Princes Island, remaining a fortnight at the Island of Ascension, and three and two days at the two latter places respectively. During this quarter only three cases of primary fever presented themselves. An attack on the town of Porto Novo, situated about thirty-five miles from Lagos, being determined on, four officers and sixty-five blue jackets and marines were detached from the ship on the 22d of April, and, taking charge of the Brune in Lagos Roads, crossed the bar,

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bar, and entered the Victoria lagoon. Five-sixths of the force were in the boats, and during the greater part of the first day were being towed by the Brune, and exposed to the direct rays of the sun, the service upon which they were engaged forbidding, it is stated, the awnings being spread. During the remainder of that day they were occupied cutting through a barrier of floating islands, which was firmly staked across the river. Whilst this was being done, the men were frequently immersed in the water, and the work being exceedingly heavy, they were much exhausted at the close of the day. The stench emitted from the broken-up barrier was very overpowering. During nearly the whole of the following day the force was actively engaged with the enemy, and, as on the previous day, exposed to the direct rays of the sun. The action having terminated with the burning of the town of Porto Novo, the expedition left for Badagry, stopping on the way down to render assistance to the Bloodhound, which had got aground. The expedition was altogether eight days in the lagoon. On the 7th of May, fifteen days after first entering the lagoon, cases of fever of a remittent type began to present themselves, and between that date and the 20th of June sixty-nine cases were under treatment. About one-sixth of these were of a serious nature, but there were no deaths. The surgeon attributes this favourable circumstance to the salutary influence of quinine, which was administered in two grain doses twice daily, for some days previous to the men entering the lagoon, continued during their stay there, and persisted in for three days after their return to the ship. The total days' sickness from these cases gave an average of about eight and a half days' sickness to each case.

The few cases of primary fever in the Antelope were of an ephemeral character, and dependent upon insolation.

Sixty-nine cases of primary fever were under treatment in the Archer, six of them having a fatal termination. These cases are almost entirely to be attributed to a prolonged stay in the Congo, the ship having been stationed in that river for thirty-four days, during the months of February, March and April. It is not stated in the returns of the ship, whether quinine was issued as a prophylactic during this time. Four cases having proved fatal in the month of March (one of these was in the person of a Krooman), and many others exhibiting severe symptoms, the ship left the river, and proceeded to the southward; having watered and coaled at St. Paul de Loando, she steamed on to Elephant Bay, where a marked change of temperature was experienced. Cases of a

serious

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serious character still, however, continued to present themselves, and it was therefore determined to proceed to St. Helena, which was accordingly done, the passage across being made in seven days, during which period two deaths occurred. At St. Helena, where the ship arrived on the 22d of April, the sick were landed, twenty being sent on shore on the day after her arrival; these all improved, and returned on board on the 20th of May, the Archer being about to proceed to Ascension; at Ascension the sick and convalescents were landed. The further history of this ship comprehends a return trip to St. Helena, and from thence back to Ascension. From Ascension she was sent to Sierra Leone, to meet the Isis, and remained in the river a week, no sickness being experienced during this time; she returned with the crew of the Isis to Ascension, and finally left for England on the 21st of August.

In the Arrogant there were ninety-three cases of primary fever, seven of which had a fatal termination: sixty-eight of these cases, including all the mortality, occurred during the Midsummer quarter, and are attributable to exposure on the River Lagos, during the attack upon the town of Porto Novo. The duties which devolved upon the officers and men of the Arrogant during this year were of a very active and onerous character. During the first quarter of the year, (in the month of February), a force of 220 officers and men were detached from the ship, to co-operate with the military force on shore, in an attack upon some native tribes in the vicinity of the colony of the Gambia. The seat of operations was about thirty miles up the river, on the banks of one of its creeks, and the men were seven days employed on the expedition. During this time, although they underwent the fatigue and exposure of marching on a heated soil, and under a burning sun, only one man suffered from fever—a serjeant of marines, who fell exhausted towards the close of the first day's march. This case was of an ephemeral nature: "In the course of the operations the men were protected as much as possible from the night dews, and either brought back at night to the frigate, or placed under cover in one of the transports, and were free from sickness when leaving the river, whilst the West Indian regiments, and the colonial militia encamped on shore, lost more men from disease (especially from pulmonary complaints), than they did in action." This exposure however, although not attended with any immediate outbreak of climatic disease, predisposed them, in all probability, it is suggested by the surgeon of the ship, to the more

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more virulent operation of the malaria to which they were six weeks afterwards exposed in the share they took in the operations against Porto Novo, in the Lagos Lagoon. To this expedition the Arrogant sent sixty marines and 104 officers and seamen, who were absent on the service six days, and were distributed between the steamer Fidelity, the Brune, and four boats, which were towed by the smaller vessel. The men in the Arrogant's boats appear to have had the protection of boats' awnings both by night and day, in which respect they had a great advantage over the Alert's men, but otherwise they experienced the same discomforts as the other men of the expedition. In breaking a passage through the barrier, which is previously alluded to as having been constructed across the river, the men were employed in the water for four hours. They seem to have complained very much of the excessive stench which arose when the stakes were drawn up, and they with one accord attributed their subsequent illness to this cause: "half a gill of rum, and an ounce of quinine wine, were served out to each man at the termination of this service, and they were directed to put on dry clothes," an injunction which it appears, however, was not very rigidly carried out. The object of the expedition having been accomplished, "the Brune tender was detached, with an officer and thirty marines, to assist in getting off the Bloodhound, which had grounded off Beachey, one of the most unhealthy portions of the Lagoon, and these marines remained in the Lagoon until the 30th of April, being exposed for one night to a tornado and heavy rain, without adequate protection; yet no fatal case occurred amongst the men of this party; but of six seamen, who were sent on the 2d of May to navigate the Brune, employed still at Beachey, who had been engaged in the expedition, and finally returned to the ship on the 6th of May, being exposed consequently for eleven days, three were attacked with fever in the frigate; of these, one died, and two had to be sent to the hospital; one deserted, and died in a merchant vessel, and the others escaped." During the expedition, and for a fortnight afterwards, quinine was administered in four-grain doses every morning to officers and men, and the surgeon states his belief that the escape of the majority of the party from fever was owing to this valuable medicine. "Forty-one cases of fever, all of which were serious, occurred after this expedition; six of these died, and twenty-five were sent to Ascension Hospital, on the 20th and 21st of June, for further treatment."

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In order to show the probable period of incubation in these cases, the surgeon of the Arrogant* has drawn up the following Table :—

When put on the Sick List.	Crew of Fidelity and Boats, 127 Persons.					Number of Days since the Men entered the Lagoon.	Number of Days since the Men got Wet at the Barrier.	Number of Days since the Men returned to Arrogant.	Crew of Brune, 37 Persons.						Total Number of Cases.	Number of Recoveries.	Number of Deaths.	Remarks.
									Marines, 31 in Number.			Blue Jackets, 6 in Number.						
	Fidelity, 61 Persons.	Launch, Crew 24.	Barge, Crew 14.	1st Cutter, Crew 14.	2d Cutter, Crew 14.				Number of Cases.	Number of Days since entering Lagoon.	Number of Days since Return to Arrogant	Number of Cases.	Number of Days since entering Lagoon.	Number of Days since Return to Arrogant.				
30 April	1	–	–	–	–	8	5	2	–	–	–	–	–	–	1	1	–	Slight cases, comparatively.
1 May	–	–	–	1	–	9	6	3	–	–	–	–	–	–	1	1	–	
4 May	–	1	–	–	–	12	9	6	–	–	–	–	–	–	1	1	–	
6 May	–	1	–	–	–	14	11	8	–	–	–	–	–	–	1	–	1	
7 May	1	2	–	–	–	15	12	9	–	–	–	–	–	–	3	2	1	
8 May	1	1	2	–	–	16	13	10	–	–	–	–	–	–	4	1	3	
9 May	1	–	1	–	–	17	14	11	1	17	9	–	–	–	3	3	–	
11 May	1	1	–	–	–	19	16	13	4	19	11	–	–	–	6	6	–	
12 May	1	–	2	–	1	20	17	14	1	20	12	–	–	–	5	5	–	
13 May	1	1	–	–	–	21	18	15	2	21	13	–	–	–	4	4	–	
14 May	2	1	1	–	–	22	19	16	3	22	14	–	–	–	7	7	–	* A master's assistant, aged 19, who had been exposed to malaria for two months.
15 May	–	–	–	–	–	–	–	–	–	–	–	1*	–	6	1	1	–	
16 May	–	–	–	–	–	–	–	–	2	24	16	2	24	6	4	3	1	
TOTAL	9	8	6	1	1	–	–	–	13	–	–	–	–	–	41	35	6	

Force :—Officers and Seamen, 104; Marines, 60; Total 164.

Number of Cases :—41, or 25 per cent., one-fourth of number. Number of Deaths, 6; about 15 per cent., nearly one-seventh of the cases.

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* Dr. Hart Gimlett.

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It may be well to note here, that the Fidelity was a hired steamer, brought from the Bonny. Her condition will be judged of by the following remarks: "The steamer Fidelity was in a filthy state when brought from the Bonny, her holds and bilges exhaling an offensive odour, which proceeded from the mangrove wood used as fuel, and one man of the division sent to clean the ship fainted, whilst others were attacked with nausea and vomiting. However, these men did not go away in the vessel, and none of them suffered from fever; the chloride of lime was used very freely, and the bilges well washed out, and no disease could be traced particularly to this vessel, as her crew had not so many sick as those of the boats." Of the six fatal cases, only one can be traced to having any connection with this vessel; and he was not only, during six days of the expedition, exposed very much to the sun, heaving the lead, but was afterwards transferred to the Brune, where he remained four days longer in the lagoon of Lagos, working hard in assisting to get the Bloodhound off a bank near Beachey, in a narrow, unhealthy part of the lagoon. The surgeon in his remarks says, with reference to this Table: "From the above Table it may be seen, that if the time of bursting the barrier is assumed as the period at which the disease was contracted, the time of incubation was prolonged from five to nineteen days, and these patients, who were under my notice almost the whole time, dated their illness from that cause. The crews of the launch and barge suffered most in proportion to their number. These two boats were anchored away from the squadron for one night at Badagry, and the men were not as careful in keeping under cover as those of the cutters; none of the marines died; four only of those in the Fidelity were attacked, but thirteen from the Brune suffered, and the cases of all were equally serious with those of the seamen." The long exposure to the direct rays of the sun, and the four hours' hard work in the water clearing away the barrier, no doubt rendered the men much more susceptible of malarial influence than under other circumstances. It is unnecessary, however, to connect the invasion of fever with the offensive emanations from the barrier itself; malarial fevers exist in their greatest intensity in many localities where there is no perceptible evidence of decaying vegetation, nor of vegetation at all; there are no facts to show that bilge-water smells, which are generally supposed to depend upon decomposition of wood and sea-water, originate fevers, and we have the fact immediately before us, that so foul was the Fidelity, that the men sent to clean her out were attacked with nausea

and

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and vomiting, and that one even fainted, and yet none of these men suffered from fever.

During the Michaelmas quarter the boats of the Arrogant, with 120 officers and men, were employed for twelve days in various warlike operations in the numerous creeks which intersect the delta of the River Congo. The men were not exposed at night, however, the expedition usually leaving at 8 a.m., and returning at 4 or 5 p.m. Only two mild cases of remittent fever resulted from this exposure.

There were 104 cases of primary fever in the Bloodhound, all of a comparatively mild character, the average days' sickness for each case being 5·75. This ship affords valuable testimony to the prophylactic influence of quinine; from her light draught of water, superior ventilation, and being a paddle steamer, which is considered to be better adapted for such work than a screw steamer, she was very constantly employed in the rivers on the coast; at different times she was in the Victoria Lagoon at Lagos, where she was on one occasion aground for fourteen days, in a most unhealthy locality; she was also employed in the Rivers Brass, Bonny, Congo, Niger, Calabar, Benin, and Volta. During all these times quinine was carefully administered, and with admirable effect, not a single loss occurring to the service from malarial fevers, either by death or invaliding.

The medical officer of the Bloodhound makes the following observations in the nosological return for the last quarter of the year :—" Since transmitting my last nosological return, the ship has, as usual, been employed chiefly on river service, and the ship's company consequently have been much exposed to the morbific influences of the climate. Although cases of fever have resulted from this, they have been of a mild character, and have all terminated in recovery. This, doubtless, is to be attributed to the administration of quinine, which was persevered in on all occasions, with one exception, when the supply ran short, and it was only four days after its cessation when fever appeared. On the 28th of October an expedition, consisting of twenty-six white men, left the ship, and proceeded with the Governor of the Gold Coast up the Volta, a distance of 126 miles, in boats. This service occupied seven days; the men were necessarily much exposed, although tents, &c. were supplied, and every means taken to avoid disease; quinine was regularly given, and no case of fever appeared. A short time afterwards we were ordered to convey the Consul of Fernando Po to the rivers of the Bights;

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Bights; we visited Niger, Brass, Bonny, Cameroons, and Calabar, remaining from three to seven days in each. On this occasion quinine was given until the supply failed; this was on the 6th of December: on the 10th fever appeared, and between that date and the 14th fourteen cases were on the list. I at once suggested the advisability of leaving the river, and proceeding to Fernando Po, where I procured a supply. After getting out to sea a favourable change rapidly took place, and only one or two cases afterwards presented themselves. This certainly appears to be a case where the valuable properties of quinine as a prophylactic are very apparent."

There were only three cases of primary fever in the Buffalo. This vessel was employed conveying stores and provisions from the Island of Ascension to the squadron on the coast, and returning to Ascension with sick and invalids, and was consequently not much exposed to malarial influences. Quinine was employed as a prophylactic when the ship lay in any unhealthy locality, and with the most satisfactory results.

Fifty-four cases of primary fever are returned from the Espoir, fifty-two of these being attributable to exposure to malarial influences in the River Niger, where this vessel was employed from the 10th of July till the 28th of September. During fifty-two days of this period quinine was administered as a prophylactic in five-grain doses every morning, and its beneficial influence is evidenced by the fact, that for the first thirty days there was very little sickness; its administration was stopped, however, on account of the supply running short. After the first thirty days "a few cases occurred; the numbers afterwards increased; so that by the time the vessel left, every European, with the exception of two, had had an attack, some slightly, others severely." There is every reason to believe that had it been possible to continue the quinine, and to have administered it, as laid down in the instructions, viz., in four-grain doses night and morning, very many of these cases would not have occurred. On the day after leaving the river a case presented itself in an officer, which proved fatal on the ninth day. The Espoir sent one officer and nine men to the expedition against Porto Novo in the month of April; although much exposed, quinine was given during the whole period of their absence, and for some days after their return, and only two cases of primary fever resulted, one of these being of a very mild character.

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There were seventy-three cases of remittent fever in the Falcon, forty-two of which occurred during the last quarter of the year, after service in the Rivers Bulam, Kate and Cameranea. Quinine, with an extra allowance of spirits, is stated to have been given on these expeditions, but no mention is made of the doses in which it was given, nor the time of its administration. There was no mortality, however, from the fever, and the average daily sickness for each case during the year was about twelve.

There were fifteen cases of primary fever in the Forte during the cruise she made as flag-ship along the coast in the first quarter of the year. They were of a trifling nature, and caused by heat and exposure to the sun.

There were only two cases of primary fever entered in the returns of the Griffon, which vessel was employed during the last quarter of the year cruising in the bights of Benin. The medical officer attributes this healthiness to the invariable use of quinine, when circumstances rendered its administration necessary or advisable.

The Philomel also suffered little from primary fever. She had four cases, one of these being of an ephemeral nature. The ship was chiefly employed cruising on the southern division of the station, and she had very little river service. The men had quinine regularly administered to them when they were exposed to malarial influences. One of the most severe cases of fever occurred in the person of a steward, who, having been landed at Lagos, was detained four days on shore by the heavy surf, which prevented his return to the ship. He slept one night in the open air.

In the Prometheus there were one hundred and eighty-nine cases of primary fever, two of which were fatal. Two-thirds of these were contracted in the River Lagos. During the first quarter of the year this vessel was lying off Shark's Point, at the mouth of the Congo, and for some time at Punta da Linha, a small settlement about thirty miles up the river. The situation is very unhealthy; but great care being taken of the men, and quinine regularly administered, only fifteen cases of fever were under treatment, and they were chiefly of an ephemeral character. A part of the Midsummer quarter was passed on the southern division of the station, the favourable climate of which seemed to exert a most beneficial influence on the general health of the ship's company. There were only eighteen cases of primary fever during this quarter, and they were all of a mild nature. On

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On the 27th of July, and from that time until the end of the year, the vessel was at anchor in the River Lagos, opposite the Consulate. For some months, until indeed the second week in November, the ship's company continued healthy, only five severe cases of fever occurring during that period. From the 14th of November the cases of fever began to multiply, and on the 3d of December forty-eight out of ninety-eight whites on board were on the sick list, while many more were under treatment, although not sufficiently ill to render it necessary to relieve them from duty. The surgeon* associates this outbreak with the appearance of a thin slime, of a vivid green colour, which floated down the river, and was deposited along the banks in many places to the depth of several inches. "The stench emitted from this at low water was highly offensive, and, taught by previous experience, the inhabitants predicted an unhealthy season. On examining this matter under a tolerably good microscope, it appeared to be composed of partly decomposed vegetable matter, containing a little animal remains, and much inorganic debris. In every specimen which I tried, decomposition had proceeded too far to admit of my detecting any perfect specimens of either kingdom. This matter comes down in larger or smaller quantities every year about the same time, and is invariably the precursor of an unhealthy time. Knowing this fact, the inhabitants along the banks employ all their labourers to clear away the matter as soon as possible. About this time the thermometer rose nearly six degrees, and the sea breeze, which usually reached us before midday, was absent until five p.m., and then became faint and oppressive. The barometer showed no variation; but the atmosphere was so dense, and evaporation so little, that every one experienced depression of spirits and oppressed respiration. From this time our fever cases rapidly increased, and by the end of December they amounted to 106, viz., thirty-eight remittent, twenty-one intermittent, and forty-seven continued, besides twenty-five mild cases, which I entered in my sick-book under the head of pyrexia." It is to be regretted that nothing is said in any of the returns as to what prophylactic measures were adopted in the ship during the time she lay in the river at Lagos. The plan adopted by the surgeon while at Punta da Linha in the River Congo was, to give each man seven grains of quinine every morning, for seven or more consecutive mornings, whenever the ship's locality was shifted, or he saw indications of feverishness among the ship's company. It is not stated whether this system

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* Mr. Henry Eales.

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system was adopted in the River Lagos, or whether quinine was given at all. This method of giving quinine as a prophylactic, however, is liable to the very serious objection that a ship may be stationed, as this ship was, for a very long time in an unhealthy locality without shifting her position, and that thus the men may be left for a long period unprotected. Should malarial influences, from any cause, meteorological or otherwise, be developed in a more than usual degree, the ushering in of feverishness among the ship's company may in such circumstances be of the most virulent character. The increased density of the atmosphere, the great rise in the thermometer, and the falling away of the sea-breeze, had probably much more to do with this sudden outbreak of fever, than the presence of the offensive green slime. Science has not yet pointed out the precise conditions which are necessary for the development of malarial fevers: they abound in the most dissimilar localities. In the journal of this ship the surgeon, speaking of Abbeokuta, says, "The country, instead of the mangrove swamps we are accustomed to see on the sea-coast, and the mouths of rivers, is here rich, covered in many places by huge granite rocks extending several acres, the only water near being a beautifully clear river; and yet fever exists here, just as in the swampy districts before named; and at Illaurane, a town very much further in the interior, elevated, with a highly cultivated surrounding country, the fever is at times most virulent. This fact appears to me to upset completely most of the theories of miasmata that have been started. Here we have no salts in the water to act on decomposed vegetable matter, and form carburetted and sulphuretted hydrogen, nor have we stagnant waters containing as their bed black mud, composed of decomposed animal and vegetable matter."

There were thirty-two cases of primary fever in the Ranger, one of which proved fatal. Fifteen of these cases occurred during the first quarter of the year, when the ship was at Fernando Po, or in the Rivers Cameroon, Malinda, Old Calabar, and Bonny. In April an officer and nine men were sent to accompany the expedition against Porto Novo, in the Lagos lagoon. They were eight days away, and, like all who were engaged in the expedition, were much exposed: they were in the ship's cutter nearly the whole time. Only two cases of remittent fever and two of intermittent resulted from this exposure. The men had quinine given them daily, and for a fortnight after their return to the ship. In the

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Michaelmas quarter, although there were seven cases of remittent fever under treatment, only two of these were of a severe character. During this quarter the ship was chiefly cruising beyond the reach of malarious influence, and was for some time at Ascension. Some cases of remittent fever occurred at St. Paul de Loando during the Christmas quarter, but they were, with one exception, of a mild nature.

The Sharpshooter was stationed for a considerable time in the River Congo, and twelve cases of primary fever are attributable to this exposure. Quinine was issued to the men while in the river. The cases were not of a severe character.

There were 114 cases of primary fever in the Torch, but fifty of these were of an ephemeral nature. Of the remaining sixty-four cases, fifty-six occurred during the last two quarters of the year. During this time the ship was for one night anchored about thirty miles up the River Nunez, in a locality where the river is only about a quarter of a mile broad, and afterwards she was in the Rivers Sherbro and Mellacoree. The cases of fever were undoubtedly owing to exposure in these localities as they made their appearance shortly afterwards. There was no loss to the service by death from these cases, but one man was invalided. It is not stated whether quinine was employed as a prophylactic during the time the vessel was in the rivers.

In the Wrangler there were thirty-six cases of primary fever, one of which proved fatal. The majority of these cases occurred after a four days' anchorage some distance up the River Congo. Quinine was regularly administered as a prophylactic during this time, and every possible care taken to preserve the health of the men, and to these precautions, it is probable, the mild nature of the seizures generally was due. The fatal case occurred in an officer, who seems to have contracted the disease at St. Paul de Loando.

Only three cases of primary fever appear in the returns of the Wye. During the latter half of 1861 she was employed as a store-ship, conveying provisions and stores to the vessels stationed on different parts of the coast. Her ship's company were not much exposed therefore to malarial influence.

Brain and Nervous System.—The mortality from delirium tremens was very great. Of twelve cases under treatment, six proved fatal; they constitute the only cases under this class

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class of disease which proved fatal: they all occurred in confirmed drunkards, two being officers, and four seamen.

Diseases of the Organs of Respiration.—There were four deaths from inflammatory affections of the lungs; two of them occurred in Kroomen; there were also seven deaths from phthisis.

Heart and Blood Vessels.—A seaman died in Ascension Hospital, in whom the chief symptoms during life were increased action of the heart, with great general debility. He died very suddenly, and on post-mortem examination of the body there was found to be fatty degeneration of the heart generally, hypertrophy of the left ventricle chiefly, and disease of the mitral valves. The only other fatal case from diseases coming under this class was in a marine, who died of aneurism of the aorta.

Stomach and Alimentary Canal, Liver, &c.—There were three fatal cases of dysentery; in one of these the disease was originally contracted in China; and in another the sufferer was a very weakly, delicate boy, who had been subjected to bowel complaints from his childhood: the third case occurred in a Krooman. Of the two fatal cases of disease of the liver, one occurred in an officer, who had for years led a most intemperate life; and the other, which was a case of multiple abscess of the liver, occurred in a seaman of the Prometheus, while the ship was at anchor in the River Lagos.

Abscess.—A warrant officer of the Espoir died in Ascension Hospital of abscess, which followed a very severe attack of fever, for which he had been invalided some time previously.

Wounds and Injuries.—One officer, seven seamen, and one marine, were killed in action: of these, the officer, two seamen, and one marine, belonged to the Arrogant, and were killed in action at Saba, in the River Gambia. A seaman of the Alecto was killed in the affair of Porto Novo; two seamen of the Espoir were killed in action with natives in the River Niger; one seaman of the Falcon was killed at Saba, and a seaman of the Wrangler was killed in the River Congo, the natives having fired into a boat, which was employed examining some of the creeks in that river.

Two men were killed, a marine and an African, by a large body of earth falling upon them while excavating at Ascension.

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sion. A marine died of erysipelas, and abscess following injuries to the face by the kick of a horse; four seamen were killed by falls from aloft; and one man died from tetanus supervening upon a wound of the foot.

Nine men were drowned; six seamen by falling overboard; one marine by being upset in a canoe off Cape Coast Castle, and two Kroomen by falling out of boats. A stoker, an African, committed suicide by hanging himself in the engine-room of the Archer.

There were forty-three deaths from disease and twenty-seven from wounds, injuries, &c., making altogether seventy, being in the ratio of 34·14 per 1,000 of mean strength. This great increase in the mortality, as compared with last year, is entirely attributable to the continued river service in which the squadron was engaged during the year, and to casualties in action or otherwise: the station was in other respects indeed rather healthier than usual.

Invalided.—Four men were invalided for the sequelæ of fever; four for diseases of the brain and nervous system; seven for diseases of the organs of respiration, of which five were for phthisis; five for diseases of the heart and blood vessels; seven for diseases of the alimentary canal; one for jaundice; six for diseases of the genito-urinary system; nine for rheumatism; eight for affections of the special senses; two for phlegmon and abscess; one for tumor; ten for dyspepsia and debility; two for dropsy; eight for wounds and injuries, and four for hernia; making a total of seventy-eight; of which seventy were for diseases, and eight for wounds, injuries, &c., the former being in the ratio of 34·40, and the latter of about 3·9 per 1,000 of mean force, a very close approximation to the loss by invaliding last year.

TABLE, No. 1.

SHOWING the Number of CASES of all DISEASES and INJURIES, and the Number INVALIDED and DEAD, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever	880	429·3	2	1·	18	·9
Intermittent Fever	186	90·7	2	1·	—	—
Measles	1	·5	—	—	—	—
Apoplexy	1	·5	—	—	—	—
Epilepsy	14	6·8	2	1·	—	—
Delirium Tremens	12	5·9	- -	- -	6	2·9
Headache, &c.	17	8·3	2	1·	—	—
Inflammation of the Lungs and Pleura	18	8·8	1	·5	4	2·
Phthisis and Hæmoptysis	12	5·9	5	2·4	7	3·4
Influenza and Catarrh	169	82·4	—	—	—	—
Cynanche	57	27·8	—	—	—	—
Asthma	1	·5	1	·5	—	—
Functional and Organic Disease of the Heart	25	12·2	4	2·	2	1·
Hæmorrhoids	9	4·4	—	—	—	—
Varix	- -	- -	1	·5	—	—
Inflammation of the Stomach and Bowels	5	2·4	2	1·	—	—
Dysentery	12	5·9	3	1·5	3	1·5
Diarrhœa	183	89·3	1	·5	—	—
Constipation and Colic	97	47·3	1	·5	—	—
Inflammation of the Liver	7	3·4	- -	- -	2	1·
Jaundice	6	2·9	1	·5	—	—

TABLE, No. 1.—Showing the Number of Cases of all Diseases, &c.—*continued.*

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Inflammation of the Bladder and Kidneys	- -	- -	1	·5	—	—
Syphilis	35	17·1	1	·5	—	—
Gonorrhœa	17	8·3	—	—	—	—
Orchitis	18	8·8	—	—	—	—
Stricture	12	5·9	4	2·	—	—
Incontinence of Urine, &c.	5	2·4	—	—	—	—
Rheumatism	172	83·9	9	4·4	—	—
Gout	3	1·5	—	—	—	—
Disease of the Bones and Joints	11	5·4	—	—	—	—
Ophthalmia	29	14·1	3	1·5	—	—
Amaurosis and Cataract	7	3·4	4	2·	—	—
Otitis and Deafness	30	14·6	1	·5	—	—
Erysipelas	8	3·9	—	—	—	—
Bubo (*Symp.*)	15	7·3	—	—	—	—
Phlegmon and Abscess	621	302·9	2	1·	1	·5
Ulcer	272	132·7	—	—	—	—
Psora	4	2·	—	—	—	—
Eruptions, &c.	43	21·	1	·5	—	—
Dyspepsia and Debility	165	80·5	10	4·9	—	—
Scurvy	2	1·	—	—	—	—
Dropsy	6	2·9	2	1·	—	—
Worms	7	3·4	—	—	—	—
Wounds and Injuries	597	291·2	8	3·9	17	8·3
Burns and Scalds	40	19·5	—	—	—	—
Hernia	6	2·9	4	2·	—	—
Drowned	- -	- -	- -	- -	9	4·4
Poison	2	1·	—	—	—	—
Suicide	- -	- -	- -	- -	1	·5
TOTAL	3,839	1872·7	78	38·	70	34·1

TABLE, No. 2.

SHOWING the Number of DAYS' SICKNESS from each DISEASE, and from INJURIES, the Average Number of Men Sick Daily, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever	9,202	1,752	10,954	30·3	14·8
Intermittent Fever - - -	1,462	219	1,681	4·6	2·2
Measles - - - - -	6	- -	6	—	—
Apoplexy - - - -	9	15	24	·1	—
Epilepsy - - - -	195	90	285	·8	·4
Insanity - - - - -	- -	13	13	—	—
Delirium Tremens - - -	109	33	142	·4	·2
Headache, &c. - - -	193	- -	193	·5	·2
Inflammation of the Lungs and Pleura - - - -	309	278	587	1·6	·8
Phthisis and Hæmoptysis -	495	177	672	1·9	·9
Influenza and Catarrh - -	1,321	2	1,323	3·6	1·8
Cynanche - - - -	413	- -	413	1·1	·5
Asthma - - - - -	5	49	54	·1	—
Functional and Organic Disease of the Heart - - -	322	219	541	1·5	·7
Hæmorrhoids - - - -	90	9	99	·3	·1
Inflammation of the Stomach and Bowels - - -	146	75	221	·6	·3
Dysentery - - - -	205	83	288	·8	·4
Diarrhœa - - - -	882	66	948	2·6	1·3
Constipation and Colic - -	418	37	455	1·2	·6
Inflammation of the Liver -	63	68	131	·4	·2
Jaundice - - - -	54	68	122	·3	·1

TABLE, No. 2.—Showing the Number of Days' Sickness from each Disease, &c.—*cont^{d}.*

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Syphilis	881	357	1,238	3·4	1·7
Gonorrhœa	218	39	257	·7	·3
Orchitis	212	102	314	·9	·4
Stricture	268	70	338	·9	·4
Incontinence of Urine, &c.	87	6	93	·3	·1
Rheumatism	2,167	253	2,420	6·7	3·3
Gout	16	- -	16	—	—
Disease of the Bones and Joints	151	109	260	·7	·3
Ophthalmia	353	107	460	1·3	·6
Amaurosis and Cataract	268	62	330	·9	·4
Otitis and Deafness	272	20	292	·8	·4
Erysipelas	21	- -	21	·1	—
Bubo (*Symp.*)	267	103	370	1·	·5
Phlegmon and Abscess	5,105	204	5,309	14·6	7·1
Ulcer	4,169	578	4,747	13·	6·3
Psora	37	- -	37	·1	—
Eruptions, &c.	444	96	540	1·5	·7
Dyspepsia and Debility	1,279	458	1,737	4·8	2·3
Scurvy	15	- -	15	—	—
Dropsy	91	48	139	·4	·2
Worms	54	- -	54	·1	—
Wounds and Injuries	6,903	664	7,567	20·7	10·1
Burns and Scalds	412	- -	412	1·1	·5
Hernia	284	- -	284	·8	·4
Poison	15	3	18	—	—
TOTAL	39,888	6,532	46,420	127·2	62·

TABLE, No. 3.

SHOWING the Number INVALIDED from each Ship employed on the WEST COAST of AFRICA Station.

CAUSE of INVALIDING.	Alecto.	Archer.	Arrogant.	Bloodhound.	Bruné.	Buffalo.	Espoir.	Falcon.	Forte.	Mæander.	Philomel.	Prometheus.	Sharpshooter.	Torch.	Wrangler.	Wye.	TOTAL.
Continued and Remittent Fever	–	–	–	–	–	–	1	–	–	–	–	–	–	1	–	–	2
Intermittent Fever	–	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	2
Epilepsy	–	–	–	–	–	–	1	–	–	–	–	1	–	–	–	–	2
Vertigo	–	–	1	–	–	–	–	–	1	–	–	–	–	–	–	–	2
Inflammation of the Lungs and Pleura	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Phthisis and Hæmoptysis	–	–	3	–	–	–	–	–	–	–	–	–	–	1	1	–	5
Asthma	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
Functional and Organic Disease of the Heart	1	–	–	–	–	–	–	–	–	1	–	–	–	–	2	–	4
Varicocele	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1
Inflammation of the Bowels	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	2
Dysentery	–	1	–	–	–	–	–	–	1	–	–	–	–	1	–	–	3
Constipation and Colic	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1
Diarrhœa	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1
Jaundice	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1	1
Cystitis	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1
Syphilis	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1
Stricture	–	–	2	1	–	–	–	–	–	–	–	–	–	–	1	–	4
Rheumatism	3	–	1	2	–	–	1	1	–	–	–	1	–	–	–	–	9
Inflammation of the Eyes	–	1	–	–	–	–	–	–	1	–	–	–	–	–	1	–	3
Amaurosis and Cataract	–	–	4	–	–	–	–	–	–	–	–	–	–	–	–	–	4
Otitis and Deafness	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1
Phlegmon and Abscess	–	–	1	–	–	1	–	–	–	–	–	–	–	–	–	–	2
Tumor	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
Dyspepsia and Debility	–	–	3	–	–	–	1	1	1	2	–	1	–	–	1	–	10
Dropsy	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	2
Wounds and Injuries	1	–	5	–	–	–	–	–	–	1	–	–	–	1	–	–	8
Hernia	–	–	–	–	–	–	–	–	1	–	–	–	1	–	1	1	4
TOTAL	7	2	20	4	1	1	6	3	6	7	1	4	1	4	10	1	78

TABLE, No. 4.

SHOWING the Number of DEATHS in each Ship employed on the WEST COAST of AFRICA Station.

CAUSE of DEATH.	Alecto.	Archer.	Arrogant.	Bloodhound.	Espoir.	Falcon.	Forte.	Mæander.	Prometheus.	Ranger.	Sharpshooter.	Torch.	Wrangler.	TOTAL.
Continued and Remittent Fever	–	6	7	–	1	–	–	–	2	1	–	–	1	18
Delirium Tremens	–	1	1	–	–	–	1	2	–	–	–	1	–	6
Inflammation of the Lungs and Pleura	–	–	–	–	–	–	1	3	–	–	–	–	–	4
Phthisis and Hæmoptysis	–	–	1	–	1	1	1	–	–	–	–	–	2	7
Functional and Organic Disease of the Heart	–	1	–	–	–	–	1	–	–	–	–	–	–	2
Dysentery	1	–	1	–	–	–	–	1	–	–	–	–	–	3
Disease of the Liver	–	–	–	–	–	1	–	–	1	–	–	–	–	2
Abscess	–	–	–	–	1	–	–	–	–	–	–	–	–	1
Wounds in Action	1	–	4	–	2	1	–	–	–	–	–	–	1	9
Wounds and Injuries	–	1	2	–	–	1	1	3	–	–	–	–	–	8
Suicide	–	1	–	–	–	–	–	–	–	–	–	–	–	1
Drowned	–	–	–	1	1	–	3	2	–	–	1	–	1	9
TOTAL	2	10	17	1	6	4	8	11	3	1	1	1	5	70

TABLE, No. 5.

SHOWING the Names of the SHIPS; the Average Complements and Mean Force of each Ship; the Total Number of Cases; the Total Number of Days' Sickness on Board; and the Average Number of Men Daily Sick.

C. Commissioned. P. O. Paid off. D. Returns defective.

NAME of SHIP.	Number of Guns, Horse Power, &c.	Period.	Average Complement.	Mean Force of each Ship.	Number of Cases.	Number of Days' Sickness on Board.	Average Number of Men Daily Sick.	Ratio per 1,000 of Mean Force of each Ship.	Number discharged to Hospital.
Alecto - - -	5 P. W. 200	year	100	100	295	2,578	7·1	71·	9
Antelope - C.	3 P. W. 260	3 mo.	90	20	60	748	2·	100·	6
Archer - P. O.	13 Sc. 202	9 mo.	175	130	299	2,975	8·2	63·1	26
Arrogant - -	47 Sc. 360	year	510	510	538	7,779	21·3	41·8	43
Bloodhound - -	3 P. W. 150	year	65	65	204	1,626	4·5	69·2	5
Bruné - - D.	2 P. W. 80	9 mo.	5	5	23	174	·5	100·	1
Buffalo - - -	2 Sc. 80	year	55	55	63	732	2·	36·4	3
Espoir - - -	5 Sc. 80	year	70	70	209	1,819	5·	71·4	31
Falcon - - -	17 Sc. 100	year	170	170	279	3,432	9·4	55·3	10
Forte - - -	39 Sc. 400	6 mo.	540	270	347	3,142	8·6	31·9	3
Griffon - - C.	5 Sc. 80	3 mo.	70	20	39	330	·9	45·	6
Mæander - -	10 - -	year	135	135	158	1,539	4·2	31·1	10
Philomel - -	5 Sc. 80	year	60	60	67	874	2·4	40·	2
Prometheus - -	5 P. W. 200	year	115	115	460	4,730	13·	113·	24
Ranger - - -	5 Sc. 80	year	75	75	231	2,159	5·9	78·7	6
Sharpshooter - P. O.	8 Sc. 202	7 mo.	95	55	79	681	1·9	34·5	1
Torch - - -	5 Sc. 80	year	70	70	216	1,383	5·2	74·3	11
Wrangler - -	4 Sc. 80	year	85	85	216	2,552	7·	82·4	12
Wye - - C.	Sc. 100	6 mo.	80	40	56	463	1·3	32·5	2

TABLE, No. 6.

SHOWING the Number of Cases of all DISEASES and INJURIES in each Ship on the WEST COAST of AFRICA Station.

DISEASE OR INJURY,	Alecto.	Antelope.	Archer.	Arrogant.	Bloodhound.	Bruné.	Buffalo.	Espoir.	Falcon.	Forte.	Griffon.	Mæander.	Philomel.	Prometheus.	Ranger.	Sharpshooter.	Torch.	Wrangler.	Wye.	TOTAL.
Continued and Remittent Fever - - - -	72	4	69	93	104	1	3	54	73	15	2	–	4	189	32	12	114	36	3	880
Intermittent Fever -	28	–	6	3	–	18	2	64	–	2	–	–	5	32	15	1	–	10	–	186
Measles - - - -	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Apoplexy - - -	–	–	–	–	–	–	–	*a* 1	–	–	–	–	–	–	–	–	–	–	–	1
Epilepsy - - -	–	–	1	–	3	–	–	2	1	1	1	–	–	5	–	–	–	–	–	14
Delirium Tremens -	1	–	–	6	–	–	1	–	–	3	–	–	–	–	–	–	1	–	–	12
Various - - -	1	–	3	3	–	–	–	2	–	1	–	–	–	–	–	–	1	2	4	17
Inflammation of the Lungs and Pleura -	1	1	4	5	1	–	–	2	–	–	1	3	–	–	–	–	–	–	–	18
Phthisis and Hæmoptysis	–	–	2	5	–	–	–	–	2	–	–	–	–	–	–	–	2	1	–	12
Catarrh - - - -	16	3	28	26	3	–	2	4	3	16	–	7	1	20	13	18	1	4	4	169
Cynanche - - -	6	4	6	15	1	–	1	–	4	5	–	2	2	2	1	1	–	7	–	57
Asthma - - - -	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1
Functional and Organic Disease of the Heart -	4	–	4	2	–	–	1	–	3	–	–	1	–	2	1	2	2	2	1	25
Hæmorrhoids - -	2	1	–	2	–	–	–	–	–	–	2	–	–	1	–	1	–	–	–	9
Inflammation of the Stomach and Bowels -	–	–	–	–	1	–	*b* 1	1	–	–	–	1	–	–	–	–	–	1	–	5
Dysentery - - -	1	3	–	2	–	–	1	–	–	1	–	–	–	1	–	–	2	1	–	12
Diarrhœa - - -	10	3	7	34	2	–	4	2	29	11	–	14	1	8	25	2	19	6	6	183
Constipation and Colic -	8	–	7	11	7	1	–	3	3	5	–	4	4	1	1	10	3	29	–	97
Inflammation of the Liver	–	–	3	–	1	–	1	–	–	–	–	–	–	1	–	–	1	–	–	7
Jaundice - - -	–	–	–	1	1	–	–	–	1	–	–	2	–	–	–	1	–	–	–	6
Syphilis - - - -	–	1	1	15	–	–	2	1	5	–	1	2	3	4	–	–	–	–	–	35
Gonorrhœa - - -	1	1	2	4	–	–	–	3	1	–	–	–	1	1	1	–	1	1	–	17
Orchitis - - - -	–	1	3	1	1	–	2	–	1	6	–	1	–	–	–	–	2	–	–	18
Stricture - - -	1	–	–	1	1	–	–	1	–	3	–	1	–	–	–	–	1	2	1	12
Incontinence of Urine, &c.	–	–	–	–	–	–	–	–	1	–	–	–	–	–	3	–	–	1	–	5
Rheumatism - - -	9	9	15	33	9	–	–	6	13	12	3	3	6	36	11	–	–	4	3	172
Gout - - - - -	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	1	3
Disease of the Bones and Joints - - -	1	–	–	1	–	–	–	–	1	–	1	–	2	1	–	2	2	–	–	11
Inflammation of the Eyes	3	1	2	4	1	–	–	2	1	2	–	5	–	1	1	1	2	3	–	29
Amaurosis and Cataract	–	–	1	4	–	–	–	–	1	–	–	–	–	1	–	–	–	–	–	7
Otitis and Deafness -	8	2	–	2	–	–	1	3	3	4	2	1	–	3	–	–	–	–	1	30
Erysipelas - - -	2	–	–	3	–	–	–	1	–	–	2	–	–	–	–	–	–	–	–	8
Bubo (*Symp.*) - -	2	–	–	3	–	–	2	1	1	1	–	–	–	2	1	–	–	2	–	15
Phlegmon and Abscess -	19	15	57	74	10	–	5	9	55	131	9	36	13	61	38	2	19	58	10	621
Ulcer - - - - -	23	3	18	49	25	–	22	12	24	13	3	21	2	10	20	–	15	9	3	272
Psora - - - - -	–	–	–	–	–	–	–	–	–	2	–	–	–	1	1	–	–	–	–	4
Eruptions, &c. - -	10	–	6	6	6	–	–	2	–	–	–	–	–	–	6	5	1	–	1	43
Dyspepsia and Debility -	12	3	9	9	3	2	5	10	8	41	3	13	7	7	23	1	3	1	5	165
Dropsy - - - - -	–	–	1	–	1	–	1	–	1	–	–	1	–	–	1	–	–	–	–	6
Worms - - - - -	–	–	–	4	–	–	–	–	1	–	–	–	–	1	–	1	–	–	–	7
Wounds and Injuries -	53	5	42	106	23	1	6	21	42	62	9	31	16	66	33	17	23	30	11	597
Burns and Scalds - -	1	–	1	9	–	–	–	–	1	8	–	6	–	2	4	–	1	6	1	40
Hernia - - - - -	–	–	–	–	–	–	–	2	–	1	–	–	–	–	–	2	–	–	1	6
Scurvy - - - - -	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
Poison - - - - -	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	2
TOTAL - - -	295	60	299	538	204	23	63	209	279	347	39	158	67	460	231	79	216	216	56	3,839

a Coup de soleil. *b* Melæna.

CAPE OF GOOD HOPE.

Cape of Good Hope Station.

The squadron on this station during the year 1861 consisted of ten vessels, with a mean force corrected for time of 1,880 men. There were 3,797 cases of disease and injury under treatment, of which fifty-nine were invalided, and thirty-four terminated fatally, being in the ratio in the former of 31·3, and in the latter of 18·1 per 1,000. The daily loss of service was unusually large, the range being from 24·2 to 163·2 per 1,000, and between these limits there were such large ratios as 128·, 77·7 and 71·8. For the five years preceding 1861 the average ratio has been from about 24·0 to 67·4 per 1,000 men, the extremes ranging from 20·0 to 88·0.

The largest daily loss of service arose from wounds and injuries, and amounted to 13·7 per 1,000 men. The daily loss of service from fevers was 5·6; from diseases of the organs of respiration 4·2; from diarrhœa and dysentery 7·7; from venereal disease 6·7; from rheumatism 5·9, and from boils and ulcers 8·7 and 8·3 respectively. The total number of men daily sick was 144·2, being in the ratio of 76·7 per 1,000 of mean force, an increase over the ratio of the year 1860 of 24·2 per 1,000 men.

Fevers.—There were 230 cases of primary fever under treatment, of which the largest numbers occurred in the Gorgon, the Lyra, the Sidon, and the Wasp. Of seventy-two cases which are returned from the Gorgon, fifty-three were of an ephemeral character, and dependent chiefly upon insolation; the remaining nineteen cases were contracted in the Mozambique Channel, and attributable to exposure to malarial influences. They were the ordinary remittent fever which is common on that coast. The average duration of each case on the sick list was about twelve days.

There were thirty-six cases of primary fever in the Lyra, one of which proved fatal; of these cases, twenty-one were of an ephemeral character, the sufferers being confined to the sick list only for four or five days. The fatal case occurred in

Cape of Good Hope Station.

REFORM CLUB PALL MALL

in the person of one of the captains' gig's crew, who was subjected to much exposure both by night and day. The case was one of great severity, death taking place in forty-eight hours; none of the other cases were of much severity, although convalescence in the majority of them was tardy.

The Sidon had forty-two cases of primary fever, two of which proved fatal. In the early part of the year the boats of this vessel captured a slave dhow, with a large number of negroes on board; these were removed to the Sidon, and remained in her until the 25th of March, when they were landed at Mauritius. The slaves were comparatively healthy, although much exhausted from exposure, and from various hardships they had undergone. Only five deaths occurred amongst them, and those seemed to be consequent upon debility following starvation. One case of fever occurred amongst the Sidon's ship's company on the 21st of March, and another on the 28th, three days after the slaves had been landed; but little notice was taken of these cases, as they did not appear to be of any urgency. On the 1st of April, however, the day before leaving the Mauritius, three cases of fever were placed on the sick list, and on the 2d, the case which had been placed on the list on the 28th of March proved fatal. From this date cases of fever continued to be added to the sick list until the 19th of April, when the last case was entered. The epidemic seemed to be at its height on the 7th of April, five cases having been added to the sick list on that day. Twenty-five cases of fever were under treatment during this epidemic; the first two cases placed on the sick list proved fatal; one, as before stated, on the sixth day; the other (which was the first case placed on the sick list) on the thirty-third day; in this case, however, the patient seems to have been carried off by erysipelas, which attacked the head and face, and was consequent upon an eruption of boils which had made their appearance some days previously on these parts, and was accompanied with much irritation and pain. The fever varied in duration and intensity in different cases; in some it only lasted a few days, in others as many weeks; "the most marked symptoms were severe frontal headache, and frequently giddiness, hot skin, thirst; rapid, small, weak pulse, being usually when the patient was first attacked 98, 100, 108, and sometimes 114; and in those which proved fatal rising much higher; a feeling of great debility, and general aching pains over the whole body; tongue coated with a white fur on the dorsum, and clean and red at the tip and edges. In the cases of the two patients who died, and

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and in that of one who recovered, there were confusion of ideas and restlesness at night." The surgeon is at a loss to account for the origin of this fever; he says, "On the appearance of this fever, every means were taken to discover the cause of its origin, but no satisfactory conclusion could be arrived at, beyond the fact that it was the most unhealthy time of the year in the Mozambique. On our arrival at the Mauritius, 24th March, the ship's company appeared to be healthy; they had not suffered from any unusual amount of exposure; the temperature was moderate; the water good, and the holds, bilges and decks clean, and free from smell. The decks have been invariably kept dry, and the ship well ventilated. On the 20th of February 272 negroes were received on board, and discharged at Mauritius on the 25th of March. Their general health was good for released slaves, only five having died during the time they were on board, the deaths being due to debility, as they were in a very emaciated condition, caused apparently by the exposure and privations they had previously endured. Two were in a dying state when received on board. No cases of fever occurred among the negroes, who did not cause any crowding or inconvenience to the ship's company, as they were kept entirely to the upper deck; all the women and children, to the number of about 200, were placed on the quarter deck, and in the barge, and the rest were arranged on the forecastle. The fever did not show itself decidedly until some time after they had left the ship; and none of those who were appointed to look after them suffered from fever. The Mauritius was not particularly unhealthy during the time we were there. The continued fever was not at all contagious, and was quite free from any marks of typhus; generally after a few days the symptoms abated; the pulse became less frequent, and the tongue cleaner, and in no instances were there any eruptions on the skin. Not one of the persons who attended upon the sick during the whole period of their illness had the slightest attack of fever subsequently."

The fever appears to have been of a low type, requiring early support and stimulation, and it is noted by the surgeon that all the affections occurring during this period, such as catarrh, cynanche and diarrhœa, were of an unusually asthenic character. The average duration of the cases upon the sick list was about twenty-five days. The temperature of the atmosphere during the period of the epidemic was great, averaging between decks from 84° to 93½°, and in the external air in the shade from 80° to 90½° of Fahrenheit's scale.

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During the month of September several cases of remittent fever occurred in this ship; at this time her boats were being constantly detached, and employed on river service, where malarial influences abounded. The vinous solution of quinine was given on all such occasions, and with very favourable results.

There were thirty-seven cases of primary fever in the Wasp, three of which had a fatal termination. All these fevers were of a remittent type, and were doubtless attributable to exposure to malaria; the majority of them occurred during the first quarter of the year, when the ship was employed in the Mozambique Channel in the suppression of the slave trade, and the fever cases followed upon hard work and exposure, consequent upon the ship getting on shore.

Stomach and Bowels.—Dysentery and diarrhœa existed in a more than usual degree during the year. There were 86 cases of the former disease, and 346 of the latter. Dysentery prevailed in the largest numbers on board the Gorgon, the Lyra, and the Wasp.

There were twenty-five cases of dysentery in the Gorgon, twenty-three of which occurred during the Christmas quarter of the year. The surgeon attributes this seizure to the water they were obliged to make use of at the Seychelles Islands; he says, "We happened to have arrived at the commencement of the rainy season, when the streams are low, and a few heavy showers had stirred up the infusorial and vegetable matter in the water; we had no condensed water, and no fuel to make any, so were obliged to get our supply of water from the shore. The consequence was, that cases of dysentery began to occur: the twenty-three cases shown in the return were the effects of it." "The attacks in some were preceded by a day's diarrhœa, while in others they were sudden; prostration was never great in any of them; the discharges were sanguinolent mucus, attended with tormina and tenesmus; but in none did the disease advance to the meat-washing discharges." "That the influx of dysentery depended on the water there could be no doubt, as the inhabitants of the place were suffering from the same disease; they attributed it to the same cause, and always expected it at this season of the year. As soon as possible we condensed water, and discarded that from the shore, thereby saving, I have no doubt, a great additional amount of sickness."

Of twenty-three cases of dysentery which are returned from the Lyra, twenty-two occurred between the 1st of April and

and the 31st of May: five of these proved fatal. During the first quarter of the year the ship's company of the Lyra were employed in most arduous and fatiguing duties, involving necessarily much exposure of the men; fever prevailed amongst the ship's company during this time, but it was chiefly of an ephemeral character. From the 1st to the 15th of April, while at anchor in the harbour of Zanzibar, "much hard work was required of the boats' crews from a cause quite unexpected. In consequence of the open manner in which slavery was practised by the Arab inhabitants of Zanzibar, many of them in the employment and attached to the court of the Sultan, it was considered necessary by the political agent to insist on permission being granted for the Lyra to act in these waters, although contrary to the treaty existing with his Highness. At this period there were in the harbour as many as fifty dhows, chiefly of the tribes which inhabit the shores of the Persian Gulf, all equipped and ready at any moment to leave with a cargo of slaves; these dhows it was necessary to examine previous to their departure. It may be easily conceived what an arduous duty devolved on the boats' crews of the Lyra." Suffice it to say that they relieved each other, cheerfully performing their duty, although much exposed to both rain and sun, in some instances finding it necessary to engage the vessels previous to boarding. Having cleared the harbour of all vessels suspected of being engaged in the traffic, on the 17th of April the Lyra again proceeded up the coast, visiting all the creeks capable of affording shelter to the dhows that had escaped the vigilance of her boats. At Wasseen several prizes were made; one of them was sent away with a crew from the ship to examine the River Pangany; the day after her departure she was lost on a reef, and the crew forced to return to the ship. From the dhows at different times taken, 200 slaves were removed to the Lyra; some of these were suffering from dysentery, and one or two were in a dying state. The dhows from which they were taken were reeking with the stench from their bodies, and from the evacuations which had been suffered to collect in the hold in which these poor wretches were stowed. In the dhow which was sent away with the officer and crew, the stench was so overpowering from the stirring up of the accumulated filth in the hold, when the vessel began to roll about at sea, that every one on board was sickened by it, being seized with vomiting and purging. On board the Lyra every endeavour was made to keep the ship as clean and wholesome as possible, but the apathy of the

slaves,

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slaves, and their extremely filthy habits rendered this a most difficult and offensive task. From this time diarrhœa and dysentery became epidemic; in the Lyra, "persons that had never been exposed in any way were seized, as also those on the sick list convalescent from fever and other complaints; no matter how careful they were with respect to diet, nothing appeared a protection." The prevalence of these affections rendered it imperative to leave the coast, and the ship proceeded, on the 22d of April, with all possible despatch for the Seychelle Islands; contrary winds, and an accident occurring to the engines, unfortunately rendered the passage very long, three weeks being occupied in that which ordinarily is performed in ten days. During this time the disease continued unabated, so that out of a complement of 113 officers and men, there were fifty-eight cases of diarrhœa and dysentery under treatment between the 1st of April and the 31st of May; at one time the sick list numbered as many as thirty-four. The ship arrived at Mahé, the principal island of the Seychelle group, on the 13th of May; the slaves were as soon as possible sent on shore, and the worst cases amongst the ship's company removed to sick quarters, hired for their reception, From this time the disease may be said to have been arrested. With regard to the cause of this outbreak of dysentery, the surgeon says, "I think the seeds of the malady may be said to have been first introduced into the ship with the slaves, several of whom were at the time suffering from dysentery, one or two of them in a dying state; and that the inhalation of the impure atmosphere emanating from so many human beings closely packed together, especially at night, by individuals already rendered susceptible of disease by exposure and hard work in a climate which at this season of the year is favourable to bowel complaint, as well as by the effects of fever, combined to develop the disease. That when once fairly established, it became epidemic in the ship, and continued till the removal of the cause, viz., the presence of the slaves, and the noxious odours exhaled from their persons, as well as from the collection of filth and excrement which it was utterly impossible to prevent at night."

Of the five fatal cases which occurred during this epidemic, one was in the person of a man who, as one of a prize crew, had been left on board a piratical slave dhow, which was hanging astern of the ship; one was in a warrant officer, who returned from cruising in a captured slave dhow off the Tanga River, with an attack of acute dysentery. Other two cases

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cases of dysentery occurred amongst the boats' crew sent to man this dhow, but they both recovered. Two fatal cases occurred in men convalescent from, but much debilitated by fever; and the fifth case was in the person of a man who, during his apparent convalescence, seems to have procured liquor or improper food while in sick quarters on shore, and thus to have induced a recurrence of the disease.

Twenty-one cases of dysentery are returned from the Wasp, one of which proved fatal. The majority of these seem to have contracted the disease after exposure, during the rainy season, on Cape Island, where the ship got on shore in the beginning of the year. Unfortunately, from the repeated changes in the medical staff of this ship, the illness and invaliding of the surgeon, the death of the assistant surgeon from fever, and the brief temporary charge of those officers who were afterwards appointed to her, there is very little to guide to an opinion of the precise cause of the invasion of this disease. Of the cases, however, which were under treatment, the disease seems to have attacked one man twice, two men three times, and one man four times. Fourteen of the cases occurred between the 19th of January and the 28th of May, the most unhealthy part of the year in the localities in which this vessel was principally employed.

Genito-Urinary Organs.—Syphilis forms a much larger item than usual this year. The difference of ratio between 1860 and 1861 is very great, being as 17·2 to 47·3. This enormous increase, however, does not in any way detract from the favourable character which the Cape Station has ever held as regards this disease; for on a careful analysis of the returns, it appears that by much the larger proportion of these cases are not referrible to this station. The ships which suffered most severely were the Cossack and the Narcissus. In the Cossack many of the cases returned are cases of secondary syphilis, and almost all the disease was contracted in England. Of the twenty-nine cases returned from the Narcissus, twenty were in the early part of the year, and were also chiefly contracted in England. More than one-half of the cases returned by the Gorgon are cases of secondary syphilis; and three of the four cases which occurred in the Lyra are of a similar nature. The disease seems to be by no means prevalent even at Simon's Bay and Table Bay, where the largest proportion of such cases as are referrible to this station are contracted. It would appear, however, to be rather prevalent

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valent in some of the seaport towns of Madagascar—in all those to which commerce has attracted Europeans.

Wounds and Injuries.—Three men were killed by falling from aloft; in two, fracture of the skull was the cause of death; in the other fracture of the sacrum. In the latter case the man was precipitated from the mainyard, and fell on his back on the deck. On post-mortem examination the sacrum was found to be fractured, the fracture extending to between the second and third spinous processes; "the bodies of the two upper sacral vertebræ had been driven forward, and dislocated."

A man was killed by falling from his hammock; he sustained dislocation of a cervical vertebra.

Two men were drowned by the capsizing of a captured dhow, and a man was drowned by the swamping of a boat.

A man is returned as "missing" from the Narcissus. He disappeared on Sheffeen Island, and no trace of him could ever be found.

The deaths from disease during the year were twenty-five, and from injuries, &c., nine, the former being in the ratio of 13·3, and the latter of 4·8 per 1,000 of mean force.

Invalided.—Fifteen men were invalided for affections of the brain and nervous system, eight of these being epileptic subjects; nine for diseases of the respiratory organs, of whom six were phthisical; seven for functional or organic disease of the heart, three for inflammatory affections of the liver, three for diseases connected with the genito-urinary organs, five for rheumatism, two for affections of the special senses, one for scrofula, four for dyspepsia and general debility, one for dropsy, six for wounds and injuries, and three for hernia; the total number invalided being fifty-nine, or in the ratio of 31·3 per 1,000.

TABLE, No. 1.

SHOWING the Number of CASES of all DISEASES and INJURIES, and the Number INVALIDED and DEAD, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever -	230	122·3	- -	- -	6	3·2
Intermittent Fever - - -	71	37·8	—	—	—	—
Small-pox - - - - -	3	1·6	—	—	—	—
Disease of the Brain - - -	2	1·1	—	—	—	—
Apoplexy - - - - -	4	2·1	- -	- -	2	1·1
Epilepsy - - - - -	14	7·4	8	4·2	—	—
Paralysis - - - - -	4	2·1	2	1·1	1	·5
Insanity - - - - -	2	1·1	3	1·6	—	—
Delirium Tremens - - -	4	2·1	—	—	—	—
Headache, &c. - - - -	40	21·3	2	1·1	—	—
Inflammation of the Lungs and Pleura - - - - -	28	14·9	3	1·6	1	·5
Phthisis and Hæmoptysis - -	11	5·9	6	3·2	4	2·1
Influenza and Catarrh - -	312	166·	—	—	—	—
Cynanche - - - - -	78	41·5	—	—	—	—
Functional and Organic Disease of the Heart - - - -	18	9·6	7	3·7	2	1·1
Hæmorrhoids - - - -	7	3·7	—	—	—	—
Inflammation of the Stomach and Bowels - - - - -	4	2·1	- -	- -	1	1·5
Dysentery - - - - -	86	45·7	- -	- -	6	3·2
Diarrhœa - - - - -	346	184·	—	—	—	—
Constipation and Colic - -	73	38·8	—	—	—	—
Inflammation of the Liver - -	18	9·6	3	1·6	1	·5
Splenitis - - - - -	3	1·6	—	—	—	—
Inflammation of the Bladder and Kidneys - - - -	4	2·1	- -	- -	1	·5
Syphilis - - - - -	89	47·3	1	·5	—	—
Gonorrhœa - - - -	24	12·8	—	—	—	—
Orchitis - - - - -	26	13·8	—	—	—	—
Stricture - - - - -	6	3·2	—	—	—	—
Incontinence of Urine, &c. - -	8	4·2	2	1·1	—	—

TABLE, No. 1.—Showing the Number of Cases of all Diseases, &c.—*continued.*

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Rheumatism - - - - -	217	115·4	5	2·7	—	—
Gout - - - - - -	1	·5	—	—	—	—
Disease of the Bones and Joints -	6	3·2	—	—	—	—
Ophthalmia - - - - -	40	21·3	—	—	—	—
Amaurosis and Cataract - -	1	·5	1	·5	—	—
Otitis and Deafness - - -	5	2·7	1	·5	—	—
Erysipelas - - - - -	8	4·2	—	—	—	—
Scrofula - - - - - -	5	2·7	1	·5	—	—
Bubo (*Symp.*) - - - -	25	13·3	—	—	—	—
Phlegmon and Abscess - -	719	382·4	—	—	—	—
Ulcer - - - - - -	238	126·6	—	—	—	—
Psora - - - - - -	32	17·	—	—	—	—
Eruptions, &c. - - - -	23	12·2	—	—	—	—
Dyspepsia and Debility - -	163	86·7	4	2·1	—	—
Dropsy - - - - - -	5	2·7	1	·5	—	—
Worms - - - - - -	11	5·9	—	—	—	—
Wounds and Injuries - - -	753	400·5	6	3·2	5	2·7
Burns and Scalds - - -	26	13·8	—	—	—	—
Hernia - - - - - -	4	2·1	3	1·6	—	—
Drowned - - - - - -	- -	- -	- -	- -	3	1·6
Missing - - - - - -	- -	- -	- -	- -	1	·5
TOTAL - - -	3,797	2019·6	59	31·3	34	18·1

TABLE, No. 2.

SHOWING the Number of DAYS' SICKNESS from each DISEASE, and from INJURIES, the Average Number of Men Sick Daily, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever	2,989	233	3,222	8·8	4·7
Intermittent Fever - - -	596	23	619	1·7	·9
Small-pox - - - -	21	- -	21	·1	—
Disease of the Brain - -	44	- -	44	·1	—
Apoplexy - - - -	5	- -	5	—	—
Epilepsy - - - -	342	150	492	1·4	·7
Paralysis - - - -	15	101	116	·3	—
Insanity - - - - -	20	47	67	·2	—
Delirium Tremens - - -	16	11	27	—	—
Headache, &c. - - -	298	- -	298	·8	—
Inflammation of the Lungs and Pleura - - - -	467	468	935	2·6	1·4
Phthisis and Hæmoptysis -	480	703	1,183	3·3	1·8
Influenza and Catarrh - -	2,164	46	2,210	6·	—
Cynanche - - - -	530	137	667	1·8	1·
Functional and Organic Disease of the Heart - - -	220	262	482	1·4	·7
Hæmorrhoids - - -	85	- -	85	—	—
Inflammation of the Stomach and Bowels - - -	125	10	135	·4	—
Dysentery - - - -	1,944	778	2,722	7·4	3·9
Diarrhœa - - - -	2,497	112	2,609	7·2	3·8
Constipation and Colic - -	343	2	345	·9	—
Inflammation of the Liver -	478	- -	478	1·3	·7
Jaundice - - - -	16	22	38	—	—
Splenitis - - - -	32	- -	32	—	—

TABLE, No. 2.—Showing the Number of Days' Sickness from each Disease, &c.—*cont*^{d}.

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Inflammation of the Bladder and Kidneys - - -	52	66	118	·3	—
Syphilis - - - -	1,701	2,269	3,970	10·9	5·8
Gonorrhœa - - - -	320	193	513	1·4	·7
Orchitis - - - -	367	265	632	1·7	·9
Stricture - - - -	125	179	304	·8	—
Incontinence of Urine, &c. -	50	185	235	·7	—
Rheumatism - - - -	2,623	1,383	4,006	11·	5·9
Gout - - - - -	7	- -	7	—	—
Disease of the Bones and Joints	54	147	201	·6	—
Ophthalmia - - - -	368	216	584	1·6	·9
Amaurosis and Cataract - -	1	91	92	·3	—
Otitis and Deafness - -	19	47	66	—	—
Erysipelas - - - -	75	61	136	·4	—
Scrofula - - - - -	96	- -	96	—	—
Bubo (*Symp.*) - - -	309	148	457	1·3	·7
Phlegmon and Abscess - -	5,646	280	5,926	16·3	8·7
Ulcer - - - - -	5,208	479	5,687	15·6	8·3
Psora - - - - -	338	- -	338	·9	—
Eruptions, &c. - - -	423	278	701	1·9	1·
Dyspepsia and Debility - -	1,330	329	1,659	4·5	2·4
Dropsy - - - - -	144	84	228	·6	—
Worms - - - - -	55	20	75	—	—
Fungus Hæmatodes - -	- -	19	19	—	—
Wounds and Injuries - -	8,137	1,137	9,274	25·7	13·7
Burns and Scalds - - -	265	143	408	1·1	·6
Hernia - - - - -	72	11	83	—	—
TOTAL - - -	41,512	11,135	52,647	144·2	76·7

TABLE, No. 3.

SHOWING the Number INVALIDED from each Ship employed on the CAPE OF GOOD HOPE Station.

CAUSE of INVALIDING.	Ariel.	Brisk.	Gorgon.	Lyra.	Narcissus.	Penguin.	Sidon.	Wasp.	TOTAL.
Epilepsy	–	1	–	–	5	1	–	1	8
Insanity	1	1	–	–	1	–	–	–	3
Paralysis	–	–	2	–	–	–	–	–	2
Neuralgia, &c.	–	–	–	–	2	–	–	–	2
Inflammation of the Lungs and Pleura	–	–	–	–	1	–	2	–	3
Phthisis and Hæmoptysis	1	1	–	–	4	–	–	–	6
Functional and Organic Disease of the Heart	–	2	–	1	2	–	1	1	7
Disease of the Liver	1	–	–	–	1	–	–	1	3
Syphilis	1	–	–	–	–	–	–	–	1
Incontinence of Urine, &c.	–	–	–	–	2	–	–	–	2
Rheumatism	1	1	–	–	3	–	–	–	5
Amaurosis	–	–	–	–	–	–	–	1	1
Deafness	–	–	–	–	1	–	–	–	1
Scrofula	–	–	1	–	–	–	–	–	1
Dyspepsia and Debility	–	2	–	–	2	–	–	–	4
Dropsy	–	–	–	–	–	–	1	–	1
Wounds and Injuries	1	1	1	–	3	–	–	–	6
Hernia	–	–	–	–	3	–	–	–	3
TOTAL	6	9	4	1	30	1	4	4	59

TABLE, No. 4.

SHOWING the Number of DEATHS in each Ship employed on the CAPE OF GOOD HOPE Station.

CAUSE OF DEATH.	Ariel.	Brisk.	Cossack.	Gorgon.	Lyra.	Narcissus.	Sidon.	Wasp.	TOTAL.
Continued and Remittent Fever	–	–	–	–	1	–	2	3	6
Apoplexy	–	–	–	–	–	1	1	–	2
Paralysis	–	1	–	–	–	–	–	–	1
Inflammation of the Lungs	–	–	–	–	–	–	1	–	1
Phthisis and Hæmoptysis	–	–	1	–	–	–	2	1	4
Disease of the Heart	–	–	–	1	–	1	–	–	2
Disease of the Bowels	–	–	–	–	–	–	–	1	1
Dysentery	–	–	–	–	5	–	–	1	6
Disease of the Liver	–	–	–	–	–	–	–	1	1
Disease of the Kidneys	–	–	–	–	–	1	–	–	1
Wounds and Injuries	–	–	–	1	–	1	2	1	5
Drowned	2	–	–	1	–	–	–	–	3
Missing	–	–	–	–	–	1	–	–	1
TOTAL	2	1	1	3	6	5	8	8	34

TABLE, No. 5.

SHOWING the Names of the SHIPS; the Average Complement and Mean Force of each Ship; the Total Number of Cases; the Total Number of Days' Sickness on Board; and the Average Number of Men Daily Sick.

C. S. Station Changed. C. Commissioned. P. O. Paid off.

NAME of SHIP.	Number of Guns, Horse Power, &c.	Period.	Average Complement.	Mean Force of each Ship.	Number of Cases.	Number of Days' Sickness on Board.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force of each Ship.	Number discharged to Hospital.
Ariel	9 Sc. - 60	year	90	90	188	1,815	5·	55·6	8
Brisk	16 Sc. - 250	year	235	235	348	3,058	8·4	35·7	10
Cossack C. S.	20 Sc. - 250	6 mo.	290	145	352	2,566	7·	24·2	17
Gorgon	6 P. W. 320	year	175	175	503	4,952	13·6	77·7	7
Lyra	9 Sc. - 60	year	110	110	263	2,880	7·9	71·8	7
Narcissus C.	39 Sc. - 400	year	560	560	965	8,776	24·	42·8	103
Penguin C.	5 Sc. - 80	9 mo.	70	50	154	2,322	6·4	128·	6
Persian P. O.	12 - -	7 mo.	135	75	155	1,007	2·8	37·3	1
Sidon	22 P. W. 560	year	295	295	436	6,049	16·6	56·3	12
Wasp P. O.	13 Sc. - 100	11 mo.	160	145	433	7,650	20·9	163·2	19

TABLE, No. 6.

SHOWING the Number of CASES of all DISEASES and INJURIES in each Ship employed on the CAPE OF GOOD HOPE Station.

DISEASE OR INJURY.	Ariel.	Brisk.	Cossack.	Gorgon.	Lyra.	Narcissus.	Penguin.	Persian.	Sidon.	Wasp.	TOTAL.
Continued and Remittent Fever	4	17	14	72	36	–	–	8	42	37	230
Intermittent Fever	3	2	4	48	1	6	4	–	3	–	71
Small-pox	–	–	–	–	–	3	–	–	–	–	3
Inflammation of the Brain	–	–	–	–	–	1	–	–	1	–	2
Apoplexy	–	–	–	–	–	2	–	–	1	[a]1	4
Epilepsy	–	2	–	–	–	9	–	–	–	3	14
Insanity	1	–	–	–	–	1	–	–	–	–	2
Delirium Tremens	1	–	1	1	–	–	–	–	–	1	4
Paralysis	–	1	–	1	–	1	–	–	–	1	4
Headache, &c.	–	3	2	2	–	7	3	–	–	23	40
Inflammation of the Lungs and Pleura	1	4	1	6	1	7	–	2	6	–	28
Phthisis and Hæmoptysis	–	1	1	–	–	2	–	–	3	4	11
Catarrh	6	31	39	15	25	102	17	16	51	10	312
Cynanche	8	16	8	5	1	13	–	3	20	4	78
Functional and Organic Disease of the Heart	–	4	4	3	1	4	1	–	1	–	18
Hæmorrhoids	–	–	1	1	1	2	2	–	–	–	7
Inflammation of the Stomach and Bowels	1	1	–	–	–	–	–	–	2	–	4
Dysentery	4	1	1	25	23	1	–	1	9	21	86
Diarrhœa	31	47	5	49	70	38	27	27	13	39	346
Constipation and Colic	2	4	2	8	4	20	4	5	12	12	73
Inflammation of the Liver	4	–	1	–	1	3	–	–	–	9	18
Splenitis	–	–	–	1	–	–	–	2	–	–	3
Inflammation of the Kidneys and Bladder	–	–	–	–	–	4	–	–	–	–	4
Syphilis	2	10	27	9	4	29	–	6	2	–	89
Gonorrhœa	–	1	5	1	–	10	–	3	4	–	24
Orchitis	–	–	8	2	2	10	1	1	–	2	26
Stricture	–	–	1	–	–	1	1	–	2	1	6
Incontinence of Urine, &c.	1	–	2	1	–	4	–	–	–	–	8
Rheumatism	17	9	30	22	19	54	10	15	32	9	217
Gout	–	–	1	–	–	–	–	–	–	–	1
Disease of the Bones and Joints	1	–	–	2	–	3	–	–	–	–	6
Inflammation of the Eyes	2	13	3	4	–	12	3	–	3	–	40
Amaurosis and Cataract	–	–	–	–	–	1	–	–	–	–	1
Otitis and Deafness	–	–	–	1	1	1	1	1	–	–	5
Erysipelas	5	–	1	–	–	1	–	–	1	–	8
Scrofula	–	–	3	–	–	1	–	–	1	–	5
Bubo (*Symp.*)	–	1	1	7	1	12	–	1	–	2	25
Phlegmon and Abscess	35	80	74	93	21	108	35	23	88	82	719
Ulcer	9	6	25	11	6	72	7	6	13	83	238
Psora	–	–	1	–	–	30	–	1	–	–	32
Eruptions, &c.	–	5	6	2	–	4	1	1	–	4	23
Dyspepsia and Debility	9	12	5	15	3	52	15	15	16	21	163
Dropsy	–	–	–	1	–	3	–	–	–	1	5
Worms	–	2	1	–	–	8	–	–	–	–	11
Wounds and Injuries	39	74	72	91	38	236	20	17	106	60	753
Burns and Scalds	2	1	1	4	4	4	2	1	4	3	26
Hernia	–	–	1	–	–	3	–	–	–	–	4
TOTAL	188	348	352	503	263	965	154	155	436	433	3,797

[a] Coup de soleil.

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ALTHOUGH the return of vessels employed on the East India and China Station in 1861 is numerically a little larger than in 1860, the mean force corrected for time is less by 2,760 men. This is explained by the fact, that of forty-three vessels of various descriptions, and a battalion of marines, employed during 1861, twenty-two of these vessels, and the marine battalion, only averaged five months' service each during the year on the station, there being only twenty-one vessels that completed the full years' time; while in 1860 of thirty-eight vessels, and the marine battalion, that were employed, the battalion and thirty-one of the ships were on the station during the whole of the year.

The squadron was employed very variously during the year. The northern part of China was almost altogether abandoned. Only one or two vessels were stationed in the Gulf of Pecheli, chiefly at the entrance of the Gulf, or at the Peiho. One vessel was in the Yang-tse-Kiang during almost the whole year, and her ship's company suffered a good deal in health in consequence; one or two vessels were employed almost exclusively on the East Indian division of the station; a surveying vessel was during the whole year at Singapore, or in the Straits of Banka; a number of vessels were on the homeward voyage to England, but the bulk of the squadron was employed in the ordinary duties of the service between Hong Kong, Shanghai and Japan.

It might reasonably have been anticipated that, with the cessation of warlike operations in China, and the consequent escape from the exposures entailed thereby, there would be a marked decrease in the days' sickness of the force in the present year as compared with the last; and as regards climatic disease, indeed, this proved to be the case. There is a great reduction of the ratio of days' sickness of fever, diarrhœa and dysentery. There is, however, a notable increase in the ratio of sickness from all diseases, an increase which is mainly contributed by small-pox, venereal diseases, rheumatism

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matism and ulcer. Small-pox occurred in an epidemic form on board Her Majesty's ship Imperieuse, and from the ship being at sea during a large portion of the time when the disease was prevailing, a considerable increase in the ratio of sickness is added under this head. Nearly one-third of the increase arises from venereal diseases contracted at Hong Kong and Japan, which were the head quarters af the squadron during the year. There is an increase from rheumatism, occasioned in many instances by the vicissitudes of climate encountered on the homeward passage; and ulcer proved very severe, and prevailed almost as an epidemic in one ship recently arrived from England, the disease having commenced during the passage out, and being aggravated, according to the opinion of the surgeon of the ship, by a scorbutic taint amongst the ship's company.

The most sickly vessels were the Algerine, the Highflyer, and the Pearl. The former, a small gun vessel, was stationed chiefly at Shanghai, where the ship's company suffered from bowel complaint. The Highflyer had been stationed in the Canton River from the beginning of the year until the 3d of February, when she left for Hong Kong *en route* for England. On the passage to the Cape, ague and diarrhœa prevailed to a considerable extent. The Pearl was at Hong Kong during the whole year, and much of the sickness from which her ship's company suffered, was from venereal diseases, contracted in that island. The healthiest ships were the Urgent, the Simoom and the Cambrian; the two former are large commodious troop ships, which were kept constantly moving on the station, and therefore little exposed to any local morbific influences; the latter was the commodore's ship on the East Indian division of the station, and was chiefly at Singapore, Trincomalee and Madras during the first half of the year; she left for England in the Michaelmas quarter.

Fevers.—There were 458 cases of primary fever, of which one was invalided, and fourteen died. Although this is a great decrease in the ratio of cases, the ratio of deaths is, as compared with last year, unfortunately, much increased. Of 511 cases of ague, three were invalided; but there were no deaths from this form of fever.

There were 108 cases of primary fever in the Chesapeake. Four-fifths of these were cases of ephemeral fever, dependent upon exposure and vicissitudes of weather, and on much work done at Hong Kong previous to leaving the station for England.

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England. Of the other cases, although, as a rule, they were tedious in their recovery, there was no mortality whatever, and it is not unlikely that their tardy recovery was occasioned in some measure by the comparative privations which a long voyage to England necessarily occasions to every one.

The Encounter, which was employed principally in Japan, and the northern parts of China, had twenty-three cases of primary fever: seven of these were of an ephemeral character, involving only about three days' sickness; while of sixteen of a more severe nature, the total days' sickness gave an average of fourteen to each case. The largest number of cases occurred during the summer season at Shanghai, and chiefly among men employed in boat service up the river; debility was the principal characteristic of these fevers, which early called for a stimulating and supporting treatment. One fatal case is returned from this ship. It does not appear, however, that the fatal event was owing to the fever; "the man had been five days on the sick list with fever, from which, being of a mild nature (he had several similar attacks in the ship), he was recovering. On turning the hands up on the morning of December 10th, his bed was found to be empty; search having been made, his blanket was found in the 'head,' and it is believed that he fell overboard from there, and was drowned." To the men who were sent away in the boats, quinine was given, "and," the surgeon says, "comparing the number added to the list with the number away on this duty, it was followed by the usual good results."

The Furious and the Fury had respectively eighteen and seventeen cases of primary fever. In neither of these ships, however, were they any severity.

There were seventeen cases of primary fever in the Hornet. This ship was employed during almost the whole year at Bombay, or in the Red Sea; thirteen of these cases occurred in the last quarter of the year at Bombay. They were almost all of a mild character, and of the remittent type, readily yielding to the influence of quinine.

Of the twenty-seven cases which are returned from the Imperieuse, the majority occurred at Hong Kong during the midsummer quarter, at which season a considerable amount of sickness is usual in that locality. The cases do not appear generally to have been of an urgent character, although, from their slow recovery, they gave an average of about 15 days' sickness to each case.

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The Odin, which was during almost the whole year at Chifu, or off the mouth of the Peiho, had twenty-nine cases of primary fever. Of these, four were cases of continued fever, which presented themselves in the latter end of May and beginning of June, when the ship was at Chifu, or in the harbour of Wei-han-Wei; they were of a somewhat severe nature, and attended by much prostration. One was a case of remittent fever, also of a severe character, and marked by intense evening exacerbations, and for some time by great sensorial disturbance; and twenty-four were cases of ephemeral fever, occurring chiefly in the summer months, at Chifu and Nagasaki. They usually resulted from insolation, the men being much exposed in erecting a stone pier, and in beach and dockyard duties on shore.

There were thirty-three cases of primary fever in the Pearl, which ship was during almost the whole year stationed at Hong Kong: with one exception, they were all of an ephemeral nature, occurring for the most part in the Midsummer quarter. The exceptional case, however, which is returned as one of typhus fever, was of a most malignant character, and proved fatal on the third day. The patient, an ordinary seaman, aged 23, presented himself on the 22d of January, complaining of severe pain in the back and loins, with much accompanying fever; he had felt unwell for a day or two previously, "and thought he had caught cold while at work at the dockyard;" he was very weak and languid. On the following day he was much worse; there was great mental and bodily prostration, with a sense of impending danger; he was restless and stupid, and the countenance was dusky and dull. On the 24th a rash appeared on his body, resembling measles; it was in some places very copious; it was of a pinkish colour, not raised above the skin, in some places coalescing into patches, and giving the whole skin a dusky appearance. Towards the afternoon the eruption became darker, especially over the back of the hands. On the 25th, the day of his death, the rash had deepened much in colour, becoming quite purple; sordes collected on his teeth and gums; he lay in a semi-comatose state, but replied sensibly when loudly spoken to. Symptoms of sinking set in, and the virulence of the disease was marked by effusion of blood into the conjunctivæ, and round the eyelids; the skin peeled off in sloughs on the slightest touch; the extremities became stiff and rigid; slight muttering delirium, and a few convulsions, preceded death. This was certainly an uncom-

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mon case. It appears to resemble more the typhus siderans, or blasting typhus, in the great severity of its symptoms, and its rapidly fatal termination, than any other form of that fever. The circumstances of this man were not such as to render him liable to contract typhus fever in any shape; and occurring as it did in a locality where remittent fever is endemic, some doubts might naturally arise as to whether it was not one of the many protean varieties of the malignant form of that disease. But the season of the year in which it occurred, the absence of any remission whatever, and the characteristic eruption, seem to mark it as a pure case of malignant typhus.

There were thirty-four cases of primary fever in the Pioneer. During the first half of the year, until the 27th of June in fact, the vessel was employed almost exclusively in Japan; and during all this time only one case of continued fever was placed on the sick list. In the Michaelmas quarter, however, there were twenty-three cases of continued fever, of a mild description, and speedily yielding to treatment; and in the Christmas quarter there were ten cases of a much more severe and protracted character. During the latter part of the year the vessel was on the southern coast of China. The days' sickness from fever, during the Michaelmas quarter, averaged about nine and a half to each case, while in the Christmas quarter it was as much as fifteen and a half.

In the Snake there were thirty-three cases of primary fever. This gun-vessel, with a complement of only sixty-five officers and men, was stationed during almost the whole year in the Yang-tse-Kiang. From the 11th of March until the 21st of September she was lying off Hankow, a large commercial town, 660 miles from the entrance of the river. One-half of the cases of fever occurred during the Michaelmas quarter, when the men were exposed to the malarial influences engendered by the gradual receding of the water of the river after the summer inundations, and the consequent exposure of enormous tracts of mud to a burning sun. From the arrival of the ship in March until the end of June, the river had risen thirty-four feet. In June it had reached its highest, and was three feet above its usual height in ordinary seasons. The whole country for miles around was submerged, and presented the appearance of an enormous lake, the towns and villages, which are built on rising ground, forming so many islands, to which junks, drawing three or four feet of water, were constantly plying. The channel of

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the river could not be traced. In July there was a fall of twenty-four inches; in August, of thirty-four inches; and up to the 21st of September there was a fall of six feet. The thermometrical range was very great. Its extremes in July were from 70° to 90°; in August, from 70° to 92°; and in September from 40° to 90°. The sick list of the ship during this period was very high; but fortunately the cases of fever were not, as a rule, severe. The general health of the ship's company, however, became much deteriorated; and, subsequently to their leaving the river, a fatal case of fever occurred in an officer.

Eruptive Fevers.—Small-pox is rarely absent from the large towns on the seaboard of China, and it very frequently exists epidemically amongst the inhabitants. It would appear that the same may also be said of Japan; so that the Chinese squadron runs peculiar risks as regards this disease. One hundred and forty-four cases are returned from the various ships of the squadron, 129 of which are from one ship. The disease seems to have prevailed chiefly at Canton, Hong Kong, and Shanghai. It also existed in the villages on the banks of the Peiho.

One case of small-pox is returned from the Adventure. It occurred at Hong Kong, and was a continuance of the disease which had been brought into the ship by the marine battalion which she was conveying to England. This was the last case. The man had been vaccinated. There were also two cases in the marine battalion which was embarked in this troop-ship, both men being also vaccinated. One case occurred amongst the gunboats which were stationed at Canton, no doubt contracted on shore. Single cases occurred in the Pearl, Ringdove, Slaney, and Vulcan, almost all contracted at Hong Kong. There were two cases in the Odin, which was stationed off the Peiho, but the disease only spread in an epidemic form in two ships, the Imperieuse and the Scout.

In the Imperieuse there were 114 cases of well-marked small-pox, and fifteen cases of a fever, which the surgeon has denominated "variolous fever," and which he considers attributable to the variolous poison.

In the Statistical Report for last year it is stated that the disease made its appearance in the Imperieuse while at anchor off the Peiho. Up to the 31st of December there had been nineteen cases, two of which had proved fatal. In order to render the history of this epidemic as complete as possible, it

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it will be advisable to refer back to them, and unite them with the cases which continued up to the 25th of January, when the last occurred, and up to which time there had been 148 cases of the disease in the ship, inclusive of those which are noted as variolous fever. The report furnished by the surgeon* of the ship is as follows. The disease prevailed on the lower deck, "affecting individuals no doubt according to susceptibility, for everyone was exposed, more or less, to infection. Two messes, opposite to each other, in the forepart of the lower deck, escaped entirely; several had only one case, and others as many as seven or eight. A greater number were attacked on the starboard side. No officer became affected before the 5th of January.

"Although vaccination must in many instances have materially modified the disease, still many of the most severe cases which recovered, and the majority of those who died, bore good vaccine marks.

"The epidemic, as might be anticipated, existed in every form, from the mildest modified, to the confluent and malignant. Altogether there were ten deaths, amongst the confluent or semi-confluent forms. Of those who died, there were—

"Seamen - -	6	Marines - -	1
Boys - -	2	Stokers - -	1

"With reference to the period at which death occurred, there were—

"On the	9th day - - -	2 deaths.
,,	10th day - - -	2 ,,
,,	11th day - - -	1 ,,
,,	12th day - - -	1 ,,
,,	13th day - - -	2 ,,
,,	14th day - - -	2 ,,

"The shortest term of the premonitory fever was twenty-four hours, the longest 72, dating from the first rigor. Shivering was usually the first symptom, then nausea and vomiting, lumbar pains, and prostration. The worst cases were those in which, after very severe lumbar pain, there succeeded sore throat, hoarseness, and profuse salivation. The eruption generally first showed itself on the face; but there were some exceptions; in one, it first appeared on the knee-caps; in three, in the groin; in eight, on the arms; and in six on the chest. In two of the worst cases the eruption scarcely rose at all; in these the head swelled enormously, and the cuticle of the face became detached, exposing a bleeding

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* Dr. Henderson.

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ing surface beneath. The sequelæ were very troublesome boils, and in a few extensive bed sores; in several there was much renal irritation, with acrid or bloody urine. There was only one severe case of ophthalmia, ending in partial opacity of the cornea; and this was the only individual whom it became necessary to invalid. An epileptic patient had complete immunity from fits throughout the disease; but when he became quite convalescent, they reappeared.

" When the malady first broke out the Imperieuse was on her way to Japan; the cases were as far as possible insulated. When it began to spread rapidly it was proposed to land those affected; but as this measure would have detained the ship, it could not be carried out. At that time it was the Admiral's intention to leave immediately for Hong Kong, but unforeseen and important events detained us until the 10th January. We arrived at Hong Kong on the 20th, and, as soon as arrangements could be made, all those affected, as well as the convalescents, were transferred to the Minden, where ample accommodation was provided. Twenty-nine of the worst cases were placed on the books of the Melville, to permit of hospital diet being drawn for them. The sick, however, were attended to solely by myself and by Mr. Broster, the senior assistant surgeon, who was sent to live on board. Only one fresh case occurred at Hong Kong.

" On the 11th of February all, except nineteen, having returned from the Minden, we proceeded up the Canton River to North Wantung, where the ship was cleared out, and thoroughly cleansed; all clothing, bedding, &c., were repeatedly washed, and the men were kept as much on shore as possible.

" We returned to Hong Kong on 13th of March, and soon afterwards took on board the remainder of the convalescents. The total number attacked was 133, of whom ten died; one was invalided, and 122 returned to duty.

" Of those who suffered there were as follows:—

" Lieutenants, R. N. - - - -	3
Midshipmen - - - - - -	3
Master's Assistants - - - -	1
Clerks - - - - - -	1
Assistant Paymaster - - - -	1
Seamen - - - - - -	93
Boys - - - - - -	19
Stokers - - - - - -	2
Marines - - - - - -	10

" With

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" With regard to vaccination, there were, of the total number, bearing—

" Fair vaccine marks - - - -	111
Vaccine marks more or less imperfect -	13
No mark whatever - - - -	9

" Of the ten who died, there were, bearing—

" Fair vaccine marks - - - -	5
Imperfect vaccine marks - - -	3
No vaccine mark - - - -	2

" For obvious reasons, no post-mortem examinations were made; in fact the bodies were buried as soon as possible. Simultaneously with the small-pox there occurred fifteen cases of what I have denominated ' variolous fever.' It resembled in all respects the premonitory fever of small-pox; but it was not in any instance followed by eruption. It corresponds with the ' febris variolosa sine eruptione,' described by Sydenham, and the possibility of the occurrence of which has been doubted by many. There were most probably many milder cases which did not come under my notice at all. Subsequently to the close of the epidemic an examination of the whole ship's company was held; about thirty were found without vaccine marks, and there was reason to believe that at least a dozen of these had had small-pox at some remote period. Vaccination was tried both with recent lymph and lymph on points from England; but although the greatest pains were taken, there was not a single successful case. Can it be possible that long continuance in an atmosphere loaded with variolous emanations had exhausted the susceptibility even to the vaccine virus?"

Small-pox appeared amongst the crew of the Scout at Ningpo, in the month of December, and five cases had presented themselves up to the end of the year. The disease was contracted at Shanghai, where the first three men attacked had been on shore, small-pox at the time being very prevalent there. No mention is made in the returns as to whether these men had been vaccinated or not.

The circumstance that epidemics of small-pox occasionally occur amongst people, a large majority of whom present good marks of vaccination, calls for very grave consideration. There can be little doubt that in a large number of cases this is attributable to the very imperfect manner in which the vaccination

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vaccination was performed. It would appear, from recent investigations, that in the present state of the law but little hope can be entertained of an effectual check being placed upon the ravages of small-pox amongst the general community, and that further legislation upon this important point is urgently called for. This is a matter of the utmost importance to the naval service, for it is on the effective working of these laws that dependence is mainly placed for the measure of protection afforded to the men who enter it, and who present evidence of having been vaccinated at some period of their lives. It is stated that even an imperfect vaccination affords a certain amount of protection to the individual. But in dealing with this question as affecting large bodies of men necessarily crowded together in a very limited space, and where isolation, even under the most favourable circumstances, can only be most imperfect, the protection afforded to the individual must be considered as of small importance compared with the risk imposed upon the community by his presence amongst them. A very mild case of small-pox may prove the starting point of a devastating epidemic, and thus the imperfectly vaccinated man may be as dangerous to his shipmates as if he had not been vaccinated at all.

Whether the protecting influence of even the most perfect vaccination is not, in a large number of individuals, liable to be more or less exhausted through lapse of time, is also worthy of careful consideration. The unquestionably modified form in which small-pox appears amongst the vast majority of those who have been vaccinated in early life is undoubted evidence of a certain amount of protecting influence conferred upon the individual by the operation, and it does not appear improbable that the greater or less severity of the attack may be in exact proportion to the measure of protection remaining. The fact that the protection afforded even by an attack of small-pox may be exhausted in process of time would appear to justify the belief that even the most perfect vaccination may undergo a similar exhaustion. These points are of great moment as bearing upon measures to be adopted for affording the largest amount of security to individuals and communities from the ravages of this hideous and fatal disease.

Brain, &c.—Ten men died from cerebral disease. In two cases there was softening of the brain, one of the sufferers having

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having been previously an epileptic subject. One was a case of inflammation of the substance of the brain, one of inflammation of the membranes. There were four deaths from apoplexy, and two from delirium tremens, the one being in an officer, the other in a seaman.

Respiratory Organs.—There were ninety-one cases of inflammatory affections of the chest, of which twelve were invalided, and four died. Twenty-seven cases of phthisis only are returned, but thirty-four cases were invalided, and fifteen died. The discrepancy between the apparent total number of cases and the results in deaths and invalidings, admits of the same explanation as was given under similar circumstances in the Report of last year. The ratio of invaliding from inflammatory affections is nearly double that of last year, but, with this exception, the ratios of deaths and invalidings from diseases of these organs, as compared with 1860, differ very little.

Heart and Blood Vessels.—Five deaths are returned under this head. In one of these the patient died suddenly after a boat race, in which he formed one of the crew of a competing boat. The heart was found to be the seat of fatty degeneration. Another death was occasioned by rupture of an aneurism into the left bronchus. In this case the sufferer was also labouring, at the time of his sudden death, under pneumonia. His symptoms, in so far as his sufferings were concerned, had been somewhat alleviated, but the physical signs of pulmonary and arterial disease were unaltered. He sat up to take his medicine, " and lay down again, making no especial complaint; but within a minute afterwards arterial blood commenced to flow per saltum from the mouth and nostrils, and he died in three minutes. Post-mortem examination displayed pneumonia of the whole of the left lung, advanced to the third stage, and three aneurisms of the aorta; one at the transverse portion of the arch, another at the descending portion of the arch, which had formed a communication by ulceration with the left bronchus, and the third in the thoracic portion of the descending aorta extending from the 7th to the 9th dorsal vertebra."

Stomach and Bowels.—There were 171 cases of dysentery and 1,449 cases of diarrhœa under treatment during the year, of which seventy-three cases of dysentery were invalided and thirty-seven died, being in the ratio of 12·6 per 1,000 of the former,

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former, and 6·4 of the latter; while of the cases of diarrhœa, twelve were invalided, and six died, the ratios in these cases being as 2·1 and 1·.

There is a great difference in the proportion of cases of these diseases as compared with the year 1860. It will be seen by the last statistical return that the ratio of cases of dysentery under treatment in 1860 was 72· per 1,000 of mean force, and of diarrhœa 325·1 per 1,000; whereas in the present year the ratio for dysentery is only 29·5 per 1,000, and of diarrhœa 241·1. The same difference to the advantage of the present year is found in the invalidings and deaths, the ratio of the former for the two diseases in 1860 being 25·9 per 1,000, and of the latter 13·6, against 14·7 per 1,000 in this year, and 7·4.

This difference to the advantage of the present year is manifestly owing to the circumstance that a large number of the vessels were on their passage to England, and that the men were consequently removed from the influences which render these diseases so prevalent amongst vessels employed in the south of China. The same circumstance in a great measure, indeed, prevents any comparison being drawn between the two years as respects these diseases, whether as regards the season of the year in which they appeared in largest numbers, or the results in recoveries, invalidings or deaths.

Dysenteric diarrhœa prevailed most extensively on board the Actæon, Centaur, Chesapeake, Imperieuse, Pearl, and Renard.

In the Actæon all the cases are returned as diarrhœa, of which eighty-five were under treatment. This ship was chiefly employed at Shanghai and Japan, and it was on the latter part of the station in the Michaelmas quarter that the largest proportion of cases occurred. Sixty were under treatment during this quarter, each case giving an average of about eight days' sickness.

One case of dysentery and ninety of diarrhœa are returned from the Centaur, which ship was stationed during the whole year in the Yang-tse-Kiang, the greater proportion of the time, off Nankin. The largest number of cases occurred during the Michaelmas quarter, and in many the disease seems to have assumed the true dysenteric type. Five of the cases proved fatal. The surgeon says, "The cases of diarrhœa were for the most part very obstinate and intractable, resisting long every variety of treatment adopted. In several instances the diarrhœa

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diarrhœa gave place to ague, and *vice versâ*, the one complaint remaining in abeyance when the other supervened."

The Chesapeake had suffered very severely from flux during the year 1860. The result was, no doubt, to leave many of her ship's company in such an unsatisfactory state of health as to render them liable to a renewal of affections of this nature under the operation of a very slight exciting cause. During the cool months of the first quarter of the year, only five cases of dysentery and thirty-two of diarrhœa were under treatment; during this time the ship was chiefly in the north of China; she arrived at Hong Kong on the 6th of March, and left for England on the 22d of May. As the thermometer rose, the cases of dysentery and diarrhœa multiplied. "As May advanced the thermometer rose to 86° and upwards, and affections of the liver and bowels became prevalent; several of these proved to be of a serious character, and unusually protracted in duration. The same oppressively high temperature obtained in the greater part of June, and there was no diminution of these disorders until we were well clear of the Straits of Sunda. Between the 15th of May and the 15th of June, fifty-one such cases were entered on the list." As the ship proceeded on her homeward voyage, however, vicissitudes of climate induced relapses in those who had previously suffered, and some patients were added to the sick list who had never before been affected with this disease. "Dysentery also, which we had hoped to have left behind in China, reappeared on the voyage, and in some instances affected men who had never before suffered from it. Most of the cases were very protracted, the mean duration of each of those entered on the tables being nearly fifty days. The disease occurred in a very severe form, but all the patients, on the whole, made satisfactory progress under the eclectic treatment I have generally pursued, and to which reference has been frequently made in former returns: even when convalescent, some showed a strong tendency to relapse. It was therefore deemed advisable to send those who had come through a perilous crisis to the hospital at Simon's Bay, and three others of the same description to Haslar, on our arrival." Altogether there were forty-one cases of dysentery, and 139 of diarrhœa, in this ship, five of which were invalided, and two had a fatal termination.

In the Pearl, which was stationed during the whole year at Hong Kong, or in its immediate vicinity, there were seven cases of dysentery, and 114 of diarrhœa. Of the seven cases of

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of dysentery, five proved fatal in hospital, and in three of these the disease was complicated with abscess of the liver. The majority of the cases occurred during the hot season of the year.

In the Imperieuse there were seventeen cases of dysentery and one hundred and nineteen of diarrhœa. Of these, two cases of diarrhœa occurred during the first quarter of the year; eight of dysentery and fifty-four of diarrhœa during the second quarter; eight of dysentery and fifty-two of diarrhœa during the third quarter, and one of dysentery and eleven of diarrhœa in the last quarter. Four of the cases of dysentery proved fatal; in one of these the disease was complicated with phthisis. During the Midsummer and Michaelmas quarters, when the diseases were most prevalent, the ship was stationed at Hong Kong.

In the Renard there were twenty-four cases of dysentery, and thirty-two of diarrhœa. The ship arrived at Ningpo on the 3d of July. The medical officer says, "Up to that date three cases only of diarrhœa had been under treatment; our approach to that unhealthy locality inaugurated the prevalence of dysentery, and dysenteric diarrhœa, from one or other of which, with a few exceptions, all on board suffered, with, of course, varied degrees of severity." From the 26th of September to the end of the year, this ship was at anchor off Nankin, and during that period several cases of dysentery occurred.

A fatal case of cholera occurred on board the Centaur, when at anchor in the Yantze Kiang, off Nankin, and a fatal case occurred in the Esk at the Mauritius. This disease, fortunately, did not prevail in an epidemic form in any ship of the squadron. There were indeed only six cases under treatment altogether; one in the Centaur and one in the Esk, both of which proved fatal; two in the Odin; one in the Scout, and one in the Sphinx.

Liver.—There were forty-four cases of inflammation of the liver under treatment, of which thirty-three were invalided, and seven died. In all the fatal cases, with one exception, the disease ran on to suppuration.

Genito-Urinary System.—There is a notable increase in the ratio of venereal diseases as compared with last year. This is entirely attributable to the larger amount of communication which the ships had with the principal seaport towns in China, such as Hong Kong and Shanghai, and with

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with Yokohama and Nagasaki in Japan, in all which places these diseases now abound. The virulent character which this fearful scourge of the naval service assumes in China, is probably dependent as much upon the more or less debilitated constitutions of the men who suffer, as upon the miserably cachectic objects from whom the disease is contracted. Be this as it may, there is, perhaps, no place where, within the last twenty years, the reception of the syphilitic poison has been fraught with more disastrous results than on this part of the station; and it is, therefore, all the more necessary that there should be no relaxation whatever in the exercise of that wholesome surveillance which has been for some time instituted over the prostitutes in those localities where we can exercise any control. The Japanese local authorities may have the power, but they certainly do not as yet seem to have the will, to check the ravages of this disease, although the fact of prostitution being with them a government monopoly, would appear to give greater facilities for almost entirely eradicating it, than can be possessed by any other nation.

There were 565 cases of syphilis under treatment. Of these, twenty-one were invalided, and one died. The ratio of invaliding is less than last year, a circumstance by no means attributable to any decrease in the severity of the disease, but simply to the fact that many of the ships were either under orders for England, or just leaving the station, so that their men went with them. The man who died sunk emaciated and exhausted in hospital, worn out under the combined influences of syphilitic and climatic cachexia.

There were thirty-eight cases of syphilis and twenty-three of gonorrhœa in the Chesapeake. These diseases were contracted at Hong Kong during the two first quarters of the year, when the ship was refitting and preparing for the voyage to England. Some of these cases would have been invalided had the ship remained in China.

In the Encounter there were thirty-four cases of syphilis, and two of gonorrhœa. In most of these cases the disease was contracted at Shanghai, where it appears to have been very prevalent, and of a virulent character. In the Imperieuse, in which there were fifty-four cases of syphilis and three of gonorrhœa, the diseases were chiefly contracted at Hong Kong and at Yokohama, in Japan. Of forty-three cases of syphilis which are returned from the Odin, thirty occurred during the last quarter of the year, when the ship left the north of China, and proceeded to Yokohama, where the men had leave, and contracted all this amount of disease

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in consequence. In the Pearl, which was stationed during the whole year at Hong Kong, there were nineteen cases of syphilis and fifty-seven of gonorrhœa. Twenty-six cases of syphilis and seventeen of gonorrhœa in the Scout were contracted chiefly at Shanghai. And of thirty-four cases of syphilis and eighteen of gonorrhœa, returned from the Sphinx, a large majority were contracted at Whampoa and Hong Kong.

Eyes.—Ophthalmia was much more prevalent during this year than in 1860. It existed as an epidemic in four vessels, the Actæon, the Algerine, the Imperieuse, and the Ringdove. In the Algerine there were twenty cases of the disease, and in the Imperieuse 198; and as the epidemic occurred in both these vessels at the same time, and in the same locality (the Bay of Yedo, Japan), and presented the same features in each, the nature of the epidemic will be understood from the report made by the surgeon of the Imperieuse: "The disease of the quarter was the epidemic ophthalmia mentioned above: it, in most respects, was quite identical with that which prevailed in the China squadron two years before, after the unsuccessful attack on the Peiho forts. The first case occurred on the 10th and the last on the 24th of August. In the intervening time 196 were put on the list. Fifty patients already on the list with other affections were attacked, and not less than 200 others were affected with the disease, but so mildly, that they continued to do their duty. Although in appearance formidable enough, the disease was in reality very mild, and appeared to tend towards a natural cure. There existed, usually for the first day or two, much conjunctival vascularity, smarting intolerance, and flow of tears. In a few cases there was some purulent discharge. Invariably both eyes were affected, but not simultaneously in every case. The average period of cure was about four days. The only remedial measures employed were an astringent lotion, and cold water applied constantly by means of a compress to the eyelids. In one instance only leeches were required. The Actæon and Ringdove had the epidemic on the Japanese coast before the arrival of this ship. It also existed amongst the natives on shore. Some of our marines, who were landed at Yedo and Kanagawa, with apparently sound eyes, got it in a day or two afterwards. The officers on board suffered nearly as much as the men. The cause was, no doubt, atmospheric; the weather was occasionally wet, but in general fine; the temperature high. In

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In almost every instance the tongue was whitish; and there was some frontal headache, leading to the conclusion that it was catarrhal."

There were sixty-five cases of ophthalmia in the Actæon: they occurred during the Midsummer and Michaelmas quarters, when the ship was on the coast of Japan. They were all of a very mild and tractable character.

The few cases which are returned from the Ringdove also occurred in Japan, during the Michaelmas quarter. The epidemic, however, was more extensive than appears by the return. The medical officer says, "Whilst at Yedo, in July, a large number of cases of ophthalmia appeared amongst the crew on board, as well as amongst those landed at the Embassy. With the exception of two cases, which were purulent, it was of the simple form. It first attacked an assistant engineer, then his brother officers, next their steward, then the stokers, and afterwards the ship's company generally. At the same time, twenty-three out of the twenty-five men on shore were affected in the same way, although they were quite well when they left the ship. It appears to be very prevalent amongst the Japanese; and, attacking the men on board and on shore simultaneously, its origin is probably due to atmospheric influence. As we were at anchor all the time, and very little duty to be done, I did not find it necessary to put more than seven cases on the sick list. The treatment consisted of a purgative at the outset, if necessary, and a solution of the nitrate of silver dropped into the eye night and morning, keeping the eye from the light, and moist with lint dipped in warm water. This plan was found to answer very well, few of the cases lasting more than three or four days."

Wounds, &c.—Five men were killed by falling from aloft; in three of these the skull was fractured, and in two death resulted from fracture of the pelvis; one man fractured his skull by falling from his hammock; one man was killed by having his head crushed between the rudder-yoke and a beam. A man fell from a height of seven feet, striking his abdomen against the edge of a plank; death resulted from rupture of the jejunum. In one man, who received a wound on shore, and in another who sustained severe injuries by the accidental explosion of a gun, necessitating amputation of the arm, tetanus supervened, and proved fatal. One man was killed accidentally by a gunshot wound, while at target drill; and a man was murdered by the Japanese.

Ten

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Ten men, altogether, were drowned: of these, one fell into the dock at Whampoa; one fell overboard, and one jumped overboard while intoxicated; and one man returned as missing was supposed to have fallen overboard.

A man was accidentally poisoned with solution of chloride of zinc; and a ward-room steward, a dissipated man, whose intellect had been waning for some time, committed suicide by cutting his throat. The total mortality under this head is twenty-four, of whom three were marines and twenty-one blue jackets.

Invalided.—Four men were invalided for fever; seventeen for disease of the brain and nervous system; forty-seven for disease of the respiratory organs, of whom thirty-four were for phthisis. Eighty-six were invalided for diseases of the alimentary canal, of whom seventy-three were for dysentery, and twelve for diarrhœa. Twenty-three were invalided for inflammatory affections of the liver; thirty-nine for diseases of the genito-urinary system, of whom twenty-one were labouring under syphilitic disease. Twenty-eight were invalided for rheumatism, and six for diseases of the bones and joints. Thirteen for diseases of the special senses; thirty-eight for scrofula, abscess, ulcer, &c., twenty-five of these being for ulcer; fourteen for dyspepsia and debility, nineteen for wounds and injuries, and six for hernia; making the total loss from invaliding 361, or in the ratio of 62·5 per 1,000 of mean force, a decrease of ten on the ratio of the preceding year.

Table, No. 1.

Showing the Number of Cases of all Diseases and Injuries, and the Number Invalided and Dead, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever	482	82·2	1	·2	14	2·4
Intermittent Fever	525	89·6	3	·5	—	—
Small-pox	144	24·6	- -	- -	13	2·2
Disease of the Brain	3	·5	4	·7	4	·7
Apoplexy	9	1·5	- -	- -	4	·7
Epilepsy	16	2·7	7	1·2	—	—
Paralysis	3	·5	1	·2	—	—
Insanity	2	·3	5	·9	—	—
Delirium Tremens	16	2·7	- -	- -	2	·3
Headache, &c.	86	14·6	—	—	—	—
Inflammation of the Lungs and Pleura	92	15·7	12	2·1	4	·7
Phthisis and Hæmoptysis	27	4·6	34	5·8	15	2·6
Influenza and Catarrh	1,037	176·9	—	—	—	—
Cynanche	134	22·8	—	—	—	—
Asthma	7	1·2	1	·2	—	—
Functional and Organic Disease of the Heart	29	4·9	13	2·2	5	·9
Hæmorrhoids	43	7·3	1	·2	—	—
Varix	13	2·2	4	·7	—	—
Inflammation of the Stomach and Bowels	17	2·9	1	·2	4	·7
Dysentery	184	31·4	73	12·4	37	6·3
Diarrhœa	1,500	256·	12	2·1	6	1·
Cholera	6	1·	- -	- -	2	·3
Constipation and Colic	192	32·7	—	—	—	—
Inflammation of the Liver	44	7·5	23	3·9	7	1·2
Jaundice	31	5·3	—	—	—	—
Splenitis	1	·2	—	—	—	—

Table, No. 1.—Showing the Number of Cases of all Diseases, &c.—*continued.*

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Inflammation of the Bladder and Kidneys	13	2·2	2	·3	—	—
Syphilis	593	101·2	21	3·6	1	·2
Gonorrhœa	261	44·5	—	—	—	—
Orchitis	200	34·1	1	·2	—	—
Stricture	54	9·2	14	2·4	—	—
Incontinence of Urine, &c.	13	2·2	1	·2	—	—
Rheumatism	626	106·8	28	4·7	—	—
Gout	9	1·5	—	—	—	—
Disease of the Bones and Joints	24	4·1	6	1·	—	—
Ophthalmia	383	65·3	2	·3	—	—
Amaurosis and Cataract	6	1·	6	1·	—	—
Otitis and Deafness	35	6·	5	·9	—	—
Erysipelas	7	1·2	—	—	—	—
Scrofula	15	2·6	2	·3	—	—
Bubo (*Symp.*)	93	15·8	—	—	—	—
Phlegmon and Abscess	1,642	280·2	8	1·4	2	·3
Ulcer	638	108·8	25	4·2	—	—
Psora	8	1·4	—	—	—	—
Eruptions, &c.	122	20·8	3	·5	—	—
Dyspepsia and Debility	383	65·3	14	2·4	5	·9
Scurvy	1	·2	—	—	—	—
Dropsy	15	2·5	2	·3	1	·2
Worms	43	7·3	1	·2	—	—
Cancer	- -		- -	- -	2	·3
Wounds and Injuries	1,633	278·6	18	3·1	12	2·1
Burns and Scalds	71	12·1	1	·2	—	—
Hernia	9	1·5	6	1·	—	—
Drowned	- -	- -	- -	- -	10	1·7
Poison	- -	- -	- -	- -	1	·2
Fish Poison	2	·3	- -	- -	- -	·2
Suicide	- -	- -	- -	- -	1	·2
Tetanus	1	·2	- -	- -	1	·2
Total	11,543	1967·9	361	61·6	153	26·1

TABLE, No. 2.

SHOWING the Number of DAYS' SICKNESS from each DISEASE, and from INJURIES, the average Number of Men Sick Daily, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever	5,582	498	6,080	16·9	2·8
Intermittent Fever - - -	4,288	34	4,322	11·8	2·1
Small-pox - - - -	3,778	1,181	4,959	13·6	2·3
Disease of the Brain - -	37	174	211	·6	·1
Apoplexy - - - -	54	- -	54	·1	—
Epilepsy - - - -	226	120	346	·9	·1
Paralysis - - - -	232	75	307	·8	·1
Insanity - - - -	267	186	453	1·2	·2
Delirium Tremens - - -	168	57	225	·6	·1
Headache, &c. - - -	652	69	721	1·9	·3
Inflammation of the Lungs and Pleura - - - -	1,717	763	2,480	6·8	1·2
Phthisis and Hæmoptysis -	768	1,398	2,166	5·9	1·
Influenza and Catarrh - -	7,903	200	8,103	22·2	3·7
Cynanche - - - -	1,085	113	1,198	3·3	·5
Asthma - - - - -	80	- -	80	·2	—
Functional and Organic Disease of the Heart - - -	814	483	1,307	3·6	·6
Hæmorrhoids - - - -	544	67	611	1·7	·2
Varix - - - - -	378	84	462	1·3	·2
Inflammation of the Stomach and Bowels - - -	355	106	461	1·3	·2
Dysentery - - - -	5,320	3,113	8,433	23·1	3·9
Diarrhœa - - - -	15,140	846	15,986	43·8	7·4
Cholera - - - - -	39	- -	39	·1	—
Constipation and Colic - -	1,068	29	1,097	2·9	·4
Inflammation of the Liver -	968	864	1,832	5·	·8
Jaundice - - - -	341	23	364	1·	—
Splenitis - - - -	49	- -	49	·1	—

TABLE, No. 2.—Showing the Number of Days' Sickness from each Disease, &c.—*contd.*

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Inflammation of the Bladder and Kidneys	158	19	177	·5	—
Syphilis	17,066	4,382	21,448	58·8	10·
Gonorrhœa	5,975	154	6,129	16·8	2·8
Orchitis	3,781	138	3,919	10·7	1·8
Stricture	2,009	805	2,814	7·7	1·3
Incontinence of Urine, &c.	197	- -	197	·5	—
Rheumatism	9,844	2,731	12,575	34·4	5·8
Gout	58	- -	58	·2	—
Ophthalmia	2,854	47	2,901	7·9	1·3
Amaurosis and Cataract	98	63	161	·5	—
Otitis and Deafness	286	108	394	1·1	·2
Erysipelas	115	- -	115	·3	—
Scrofula	836	97	933	2·6	·4
Bubo (*Symp.*)	2,436	5	2,441	6·7	1·1
Phlegmon and Abscess	16,603	556	17,159	47·	8·
Ulcer	15,572	3,689	19,261	52·8	8·6
Psora	116	8	124	·3	—
Eruptions, &c.	1,712	296	2,008	5·5	·9
Dyspepsia and Debility	4,050	676	4,726	12·9	2·2
Scurvy	12	- -	12	—	—
Dropsy	118	183	301	·8	·1
Worms	431	185	610	1·7	·2
Cancer	- -	4	4	—	—
Purpura	- -	126	126	·3	—
Wounds and Injuries	20,545	1,406	21,951	60·1	10·2
Burns and Scalds	1,001	54	1,055	2·9	·4
Hernia	200	- -	200	·5	—
Fish Poison	2	- -	2	—	—
TOTAL	157,928	26,215	184,143	507·7	86·7

TABLE, No. 3. - - - - - - -

SHOWING the Number INVALIDED from each Ship - - - - -

CAUSE of INVALIDING.	Acorn.	Actæon.	Algerine.	Beagle.	Cambrian.	Centaur.	Charybdis.	Chesapeake.	Encounter.	Esk.	Furious.	Gunboats.	Hesper.	Highflyer.	Hornet.
Fever - - - - -	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–
Intermittent Fever - - -	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–
Disease of the Brain - -	–	1	–	–	1	–	–	–	–	–	–	1	–	–	–
Paralysis - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Epilepsy - - - -	–	–	–	–	–	–	–	–	–	–	–	1	–	–	1
Insanity - - - -	–	–	–	–	–	–	1	–	–	–	–	2	–	–	–
Inflammation of the Lungs and Pleura - - - -	–	1	–	–	1	–	1	–	–	1	–	3	–	–	1
Phthisis and Hæmoptysis -	–	–	–	–	–	1	2	1	–	–	–	7	–	–	–
Asthma - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Functional and Organic Disease of the Heart - - -	–	–	1	2	–	–	–	–	–	–	2	1	–	–	–
Hæmorrhoids - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Varix - - - - -	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–
Dysentery - - - -	1	–	1	–	1	6	1	5	–	–	–	28	1	4	–
Diarrhœa - - - -	–	–	–	–	–	6	–	–	–	–	–	–	–	–	–
Hæmatemesis - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Inflammation of the Liver -	–	–	–	–	–	1	–	2	–	–	–	6	–	–	–
Inflammation of the Bladder and Kidneys - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Syphilis - - -	–	–	–	–	–	–	2	1	1	–	–	5	1	–	1
Orchitis - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Stricture - - - -	–	–	–	–	–	–	–	1	–	–	–	–	1	–	1
Incontinence of Urine - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Inflammation of the Eyes - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Amaurosis and Cataract - -	–	–	–	–	–	–	–	–	–	–	–	2	–	–	2
Otitis and Deafness - -	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–
Rheumatism - - -	–	1	–	1	1	–	–	2	–	–	–	5	–	–	1
Disease of the Bones and Joints	–	–	–	–	–	–	1	1	–	–	–	1	–	–	1
Phlegmon and Abscess - -	–	–	–	–	–	–	–	3	–	–	–	3	–	–	–
Ulcer - - - - -	–	–	–	–	–	–	7	1	–	–	–	4	–	–	1
Eruptions - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Scrofula - - - -	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Dyspepsia and Debility - -	–	–	–	–	–	–	–	1	1	–	–	3	–	–	–
Dropsy - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Worms - - - -	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–
Wounds and Injuries - -	–	1	–	1	–	2	1	1	–	–	–	1	–	1	–
Burns and Scalds - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Hernia - - - -	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–
TOTAL - - -	2	4	2	4	5	17	16	19	3	1	2	72	3	5	12

– – – – – – TABLE, No. 3.

– – – – – employed on the EAST INDIA and CHINA Station.

Imperieuse.	Inflexible.	Leven.	Marine Battalion.	Nimrod.	Odin.	Pearl.	Pioneer.	Princess Charlotte.	Renard.	Ringdove.	Roebuck.	Sampson.	Saracen.	Scout.	Simoom.	Slaney.	Snake.	Sphynx.	Urgent.	Vulcan.	TOTAL.
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3
–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	4
1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
2	–	–	–	–	–	1	–	–	1	–	1	–	–	–	–	–	–	–	–	–	7
–	–	–	–	–	–	1	–	–	–	–	–	–	–	1	–	–	–	–	–	–	5
1	–	–	–	–	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	12
4	–	1	–	–	2	2	–	1	1	2	–	–	–	5	–	–	–	4	–	1	34
–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
2	–	–	–	–	1	–	1	–	–	–	–	–	–	1	1	–	–	1	–	–	13
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1
1	1	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	4
12	–	–	–	–	–	4	–	3	1	1	–	–	–	1	–	–	2	5	1	–	73
–	–	–	–	–	–	5	–	–	–	–	–	–	–	1	–	–	–	–	–	–	12
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1
4	–	–	–	–	1	2	3	–	–	–	1	–	–	1	–	–	–	2	–	–	23
–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
1	–	–	–	–	–	1	–	–	–	1	–	–	–	2	–	–	–	2	–	3	21
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1
3	–	–	1	1	–	2	–	–	–	–	–	1	1	1	–	–	–	1	–	–	14
–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	1
1	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	1	–	–	–	–	6
–	1	–	–	–	1	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	5
4	–	–	–	–	1	1	–	–	1	1	–	–	1	2	1	–	–	–	2	3	28
–	–	–	–	–	–	–	–	1	–	–	–	–	1	–	–	–	–	–	–	–	6
–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1	8
1	–	–	–	–	–	1	–	–	–	–	–	–	1	3	–	–	–	–	6	–	25
–	–	–	–	–	–	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3
–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
2	–	–	–	–	–	–	–	2	–	–	–	–	–	–	1	–	1	2	1	–	14
–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
2	1	–	–	1	1	–	–	–	1	–	–	1	–	1	–	1	–	–	–	1	18
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
1	–	–	–	–	–	–	1	–	–	–	–	–	–	2	–	–	–	–	–	1	6
42	3	2	1	2	13	27	6	7	7	5	2	3	4	22	5	2	4	17	10	10	361

TABLE, No. 4. - - - - - - - -

SHOWING the Number of DEATHS in each Ship - - - -

CAUSE of DEATH.	Actæon.	Adventure.	Algerine.	Cambrian.	Centaur.	Charybdis.	Chesapeake.	Encounter.	Esk.	Furious.	Gunboats.	Hesper.	Highflyer.	Imperieuse.
Continued and Remittent Fever	–	1	–	1	2	–	–	–	–	–	1	–	1	–
Small-pox	–	–	–	–	–	–	–	–	–	–	–	–	–	8
Disease of the Brain	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Apoplexy	–	–	–	–	–	1	–	–	–	–	–	–	–	1
Delirium Tremens	–	–	–	–	–	–	–	–	–	–	–	1	–	–
Inflammation of the Lungs and Pleura	–	–	–	–	–	–	–	1	–	–	2	–	–	1
Phthisis and Hæmoptysis	2	–	–	–	1	1	1	–	–	–	2	–	–	3
Functional and Organic Disease of the Heart	–	–	–	–	–	1	–	–	–	–	–	–	–	1
Inflammation of the Stomach and Bowels	–	–	–	–	–	–	–	–	–	–	1	–	–	–
Dysentery	–	–	1	–	4	–	2	–	–	–	10	–	1	4
Diarrhœa	–	–	–	–	5	–	–	1	–	–	–	–	–	–
Cholera	–	–	–	–	1	–	–	–	1	–	–	–	–	–
Disease of the Liver	–	–	1	1	1	–	–	–	–	–	1	–	–	–
Syphilis	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Cancer	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Abscess	–	–	–	–	–	–	–	–	–	–	1	–	–	–
Dropsy	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Fungus Hæmatodes	–	–	–	–	–	–	1	–	–	–	–	–	–	–
Dyspepsia and Debility	–	–	–	–	1	–	–	–	–	–	1	–	–	1
Tetanus	–	–	–	–	–	–	–	–	–	–	1	–	–	–
Wounds and Injuries	–	–	–	–	–	2	1	–	–	–	–	–	–	3
Drowned	2	–	–	–	–	1	1	1	–	–	2	–	1	1
Poison	1	–	–	–	–	–	–	–	–	–	–	–	–	–
Suicide	–	–	–	–	–	–	–	–	–	1	–	–	–	–
TOTAL	5	1	2	2	15	6	6	3	1	1	22	1	3	23

TABLE, No. 4.

employed on the EAST INDIA and CHINA Station.

Inflexible.	Leven.	Magicienne.	Marine Battalion.	Nimrod.	Odin.	Pearl.	Pioneer.	Princess Charlotte.	Renard.	Ringdove.	Sampson.	Saracen.	Scout.	Simoom.	Snake.	Sparrowhawk.	Sphinx.	Urgent.	Vulcan.	TOTAL.
-	-	-	-	-	-	1	-	1	-	1	-	1	1	1	2	-	-	-	-	14
-	-	-	2	-	1	1	-	-	-	1	-	-	-	-	-	-	-	-	-	13
2	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	4
-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	4
-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
-	-	-	1	-	-	-	1	-	-	1	-	-	1	1	-	-	-	-	-	15
-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	1	-	5
-	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	4
-	-	-	2	1	-	5	-	-	-	-	-	-	4	1	-	-	1	-	1	37
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
-	-	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	7
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2
-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	5
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	1	-	1	3	-	-	-	-	-	-	-	-	-	-	-	-	1	-	12
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	10
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
2	1	1	8	2	5	8	3	1	1	3	2	1	9	5	2	1	2	2	3	153

TABLE, No. 5.

SHOWING the Names of the SHIPS; the Average Complement and Mean Force of each SHIP; the Total Number of Cases; the Total Number of Days' Sickness on Board, and the Average Number of Men Daily Sick.

P. O. Paid off. C. Commissioned. D. Returns defective. S. C. Station changed.

NAME of SHIP.	Number of Guns, Horse Power, &c.	Period.	Average Complement.	Mean Force of each Ship.	Number of Cases.	Number of Days' Sickness on Board.	Average Number of Men Daily Sick.	Ratio per 1,000 of Mean Force of each Ship.	Number discharged to Hospital.
Acorn - - P. O.	12 - -	5 mo.	105	45	16	526	1·4	31·1	3
Acorn - - C.	- - -	½ mo.	40	5	16	159	·5	100·	–
Actæon - - -	26 - -	year	150	150	487	5,584	15·3	102·	3
Adventure - P. O.	2 Sc. - 400	4 mo.	160	50	104	1,486	4·1	82·	4
Algerine - - D.	1 Sc. - 80	9 mo.	50	35	144	1,607	4·3	122·9	6
Beagle - - -	4 Sc. - 80	year	60	60	120	1,283	3·6	60·	1
Cambrian - P. O.	40 - -	10 mo.	320	270	441	4,722	12·9	47·8	9
Centaur - - -	6 P. W. 540	year	170	170	417	5,490	15·1	88·9	3
Charybdis - S. C.	21 Sc. - 400	9 mo.	260	195	393	6,501	17·8	91·3	37
Chesapeake - P. O.	39 Sc. - 400	10 mo.	485	405	969	11,877	32·5	80·9	76
Cruiser - - P. O.	17 Sc. - 60	4 mo.	180	60	181	1,949	5·3	88·3	8
Cyclops - - P. O.	6 P. W. 320	4 mo.	175	60	103	1,446	3·9	65·	3
Encounter - -	14 Sc. - 360	year	180	180	267	3,329	9·1	50·6	5
Esk - - P. O.	21 Sc. - 250	6 mo.	220	110	208	1,834	5·1	46·3	3
Furious - - P. O.	16 P. W. 400	8 mo.	185	125	154	4,504	12·4	99·2	11
Fury - - P. O.	6 P. W. 515	6 mo.	245	120	148	2,124	5·8	48·4	3
Gunboats - D.	- - -	6 mo.	160	80	55	414	1·1	61·7	4
Hesper - - -	4 Sc. - 150	year	55	55	99	1,189	3·3	60·1	3
Highflyer - P. O.	21 Sc. - 250	5 mo.	260	80	276	3,992	10·3	129·9	18
Hornet - - -	17 Sc. - 100	year	160	160	411	3,531	9·7	60·6	5
Imperieuse - -	39 Sc. - 360	year	505	505	1,176	18,116	49·6	98·2	80
Inflexible - P. O.	6 P. W. 378	4 mo.	200	65	128	2,113	5·8	89·2	5
Insolent - - D.	2 Sc. - 60	6 mo.	40	20	46	674	1·9	85·	2
Leven - - -	1 Sc. - 80	year	50	50	77	1,134	3·1	62·	4
Magicienne - P. O.	16 P. W. 400	4 mo.	260	85	173	2,031	5·6	65·9	5
Marine Battalion, P.O.	- - -	4 mo.	555	185	267	4,635	12·6	68·1	28
Nimrod - - P. O.	6 Sc. - 175	7 mo.	110	60	101	1,349	3·7	61·6	–
Odin - - -	16 P. W. 560	year	290	290	663	7,285	19·9	68·7	2
Pearl - - -	21 Sc. - 400	year	250	250	793	10,675	29·2	116·8	48
Pioneer - - -	6 Sc. - 350	year	100	100	197	3,367	9·2	92·	9
Princess Charlotte -	12 - -	year	445	445	198	3,398	9·3	20·9	2
Renard - - -	4 Sc. - 200	year	85	85	261	3,362	9·2	108·1	9
Ringdove - -	4 Sc. - 200	year	85	85	153	1,948	5·3	62·4	4
Roebuck - P. O.	6 Sc. - 175	6 mo.	105	50	105	1,090	2·9	58·	3
Sampson - P. O.	6 P. W. 467	4 mo.	255	85	182	2,646	7·2	84·7	4
Saracen - - -	4 - -	year	40	40	36	727	2·	50·	–
Scout - - -	21 Sc. - 400	year	245	245	386	5,562	15·2	62·	21
Simoom - - -	4 Sc. - 400	year	190	190	256	4,402	12·1	63·7	4
Slaney - - -	1 Sc. - 80	year	40	40	94	909	2·4	60·	5
Snake - - -	4 Sc. - 160	year	65	65	197	2,425	6·7	103·1	6
Sparrowhawk - P. O.	4 Sc. - 200	4 mo.	85	30	70	886	2·4	80·	6
Sphinx - - -	6 P. W. 500	year	155	155	398	5,160	14·1	90·4	18
Urgent - - -	4 Sc. - 400	year	165	165	108	2,488	6·8	41·2	11
Vulcan - - -	6 Sc. - 400	year	155	155	471	5,544	15·2	98·1	24

TABLE, No. 6.

SHOWING the Number of CASES of all DISEASES and INJURIES in each Ship employed on the EAST INDIA and CHINA Station.

DISEASE OR INJURY.	Acorn.	Acorn.	Acton.	Adventure.	Algerine.	Beagle.	Cambrian.	Centaur.	Charybdis.	Chesapeake.	Cruiser.	Cyclops.	Encounter.	Esk.
Continued and Remittent Fever	-	-	2	6	-	6	12	5	-	108	1	-	23	6
Intermittent Fever	-	-	-	6	2	7	19	99	2	18	8	-	5	2
Small-pox	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Inflammation of the Brain	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apoplexy	-	-	-	-	-	[a]1	1	-	-	-	-	-	-	-
Epilepsy	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Insanity	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Delirium Tremens	-	-	1	-	-	-	1	-	2	1	-	-	-	-
Paralysis	-	-	1	-	-	-	-	-	-	2	-	-	-	-
Headache, &c.	-	-	3	-	-	6	8	3	3	1	3	2	-	-
Inflammation of the Lungs and Pleura	-	-	4	-	-	-	1	1	1	6	3	-	3	-
Phthisis and Hæmoptysis	-	-	-	-	-	-	-	-	2	-	1	1	-	-
Catarrh	1	1	105	4	9	6	27	58	76	38	27	13	5	18
Cynanche	-	-	5	1	3	1	1	2	3	26	1	-	6	2
Asthma	-	-	1	-	-	-	-	-	-	1	-	-	-	-
Functional and Organic Disease of the Heart	-	-	1	-	1	4	-	1	2	5	1	-	-	-
Hæmorrhoids	-	-	2	-	1	-	8	1	-	6	1	-	1	1
Varix	-	1	1	-	1	-	-	3	-	-	-	-	-	-
Inflammation of the Stomach and Bowels	-	-	1	-	-	-	-	1	-	1	-	-	-	-
Dysentery	-	3	-	2	2	-	4	1	2	41	1	4	3	1
Diarrhœa	-	6	85	9	29	7	30	90	29	139	22	1	27	24
Cholera	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Constipation and Colic	-	-	4	2	-	4	5	-	3	18	-	9	2	18
Inflammation of the Liver	1	-	-	-	2	-	-	2	1	9	-	-	-	-
Jaundice	-	-	-	-	2	2	-	-	1	-	-	-	1	3
Splenitis	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inflammation of the Kidneys and Bladder	-	-	1	1	1	-	1	-	1	-	-	-	-	-
Syphilis	-	2	19	8	10	2	17	6	6	38	9	6	34	6
Orchitis	1	-	4	5	1	2	11	2	3	11	1	-	7	5
Stricture	-	-	-	-	1	1	1	1	-	7	-	-	-	1
Incontinence of Urine, &c.	-	-	4	-	-	-	-	-	-	-	-	-	-	-
Gonorrhœa	-	-	4	4	9	1	3	3	4	23	11	-	2	2
Rheumatism	5	-	26	10	3	8	48	24	11	74	17	1	14	11
Gout	-	-	-	-	-	-	-	-	4	1	-	-	2	-
Disease of the Bones and Joints	2	-	-	-	-	-	-	-	1	3	-	-	1	-
Inflammation of the Eyes	-	-	65	3	20	-	2	1	4	18	3	-	1	2
Amaurosis and Cataract	-	-	-	-	-	1	-	-	-	1	1	-	-	-
Otitis and Deafness	-	-	3	3	-	1	1	-	1	3	-	-	2	1
Erysipelas	-	-	-	-	-	-	1	-	-	1	-	-	-	-
Scrofula	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Bubo (*Symp.*)	-	-	4	1	1	-	6	2	11	6	-	1	-	-
Phlegmon and Abscess	2	-	34	13	17	18	100	51	45	107	25	15	58	27
Ulcer	-	1	15	6	9	5	32	18	87	30	7	16	13	11
Psora	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Eruptions, &c.	-	-	26	-	1	16	2	-	10	2	-	-	2	-
Dyspepsia and Debility	1	-	13	12	13	2	8	10	39	19	-	2	10	15
Scurvy	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dropsy	-	-	1	-	-	-	1	1	-	-	-	-	-	-
Worms	-	-	4	-	-	-	-	-	-	-	1	-	-	-
Wounds and Injuries	3	2	47	7	4	18	83	30	45	199	33	31	41	50
Burns and Scalds	-	-	-	-	-	1	7	-	2	5	3	1	4	1
Hernia	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fish Poison	-	-	-	-	2	-	-	-	-	-	-	-	-	-
Tetanus	-	-	-	-	-	-	-	-	1	-	-	-	-	-
TOTAL	16	16	487	104	144	120	441	417	393	969	181	103	267	208

continued on p. 192.

[a] Coup de soleil.

TABLE, No. 6.—Showing the Number of Cases of all Diseases and Injuries - - - - -

continued from page 191.

DISEASE OR INJURY.	Furious.	Fury.	Gunboats.	Hesper.	Highflyer.	Hornet.	Imperieuse.	Inflexible.	Insolent.	Leven.	Magicienne.	Marine Battalion.	Nimrod.
Continued and Remittent Fever	18	17	–	8	1	20	27	6	1	12	–	5	2
Intermittent Fever	5	15	11	4	59	–	1	6	4	–	23	39	8
Small-pox	–	–	1	–	–	–	129	–	–	–	–	2	–
Inflammation of the Brain	–	–	2	–	–	–	–	–	–	–	–	–	–
Apoplexy	–	–	–	–	–	–	1	1	–	–	–	–	–
Epilepsy	–	–	–	–	1	2	2	–	1	–	–	–	–
Insanity	–	–	–	–	–	–	–	–	–	–	–	1	–
Delirium Tremens	–	–	–	1	–	–	–	–	–	2	2	–	–
Paralysis	–	–	–	–	–	–	–	–	–	–	–	–	–
Headache, &c.	–	1	1	–	–	–	5	–	–	–	–	7	1
Inflammation of the Lungs and Pleura	11	2	1	2	–	–	6	–	2	–	1	6	–
Phthisis and Hæmoptysis	1	–	–	–	–	1	5	1	1	–	–	–	–
Catarrh	–	3	1	–	6	45	107	29	–	–	4	11	11
Cynanche	1	2	–	–	2	4	–	2	–	–	2	4	3
Asthma	–	–	–	–	2	–	–	–	–	–	–	–	–
Functional and Organic Disease of the Heart	2	–	–	–	–	1	1	–	–	–	–	–	–
Hæmorrhoids	2	–	1	–	–	–	–	–	–	1	1	–	–
Varix	–	–	–	–	–	–	–	1	–	–	–	–	–
Inflammation of the Stomach and Bowels	1	1	–	–	–	–	–	–	–	–	1	3	–
Dysentery	4	3	–	5	4	1	17	–	4	1	1	4	1
Diarrhœa	17	15	7	10	64	91	119	22	4	8	36	38	9
Cholera	–	–	–	–	–	–	–	–	–	–	–	–	–
Constipation and Colic	2	2	1	–	–	3	11	4	–	–	6	4	3
Inflammation of the Liver	1	–	–	–	–	1	2	–	–	–	–	3	1
Jaundice	–	2	–	1	–	–	2	–	–	–	–	–	–
Splenitis	–	–	–	–	1	–	–	–	–	–	–	–	–
Inflammation of the Kidneys and Bladder	–	1	–	–	–	2	–	–	–	–	–	–	–
Syphilis	3	1	8	9	22	8	54	2	9	15	18	20	3
Orchitis	6	7	3	1	6	6	19	–	1	2	4	8	4
Stricture	–	–	–	3	–	4	5	3	–	–	–	1	1
Incontinence of Urine, &c.	–	–	–	–	–	2	–	–	–	–	–	–	–
Gonorrhœa	–	–	4	–	4	9	3	–	1	1	4	4	1
Rheumatism	9	14	2	9	13	19	30	–	2	9	16	19	1
Gout	–	–	–	–	–	–	–	–	–	–	–	–	–
Disease of the Bones and Joints	–	–	–	–	–	4	–	–	–	1	–	1	–
Inflammation of the Eyes	1	1	1	1	3	1	198	–	–	–	2	13	2
Amaurosis and Cataract	–	–	–	–	1	2	–	–	–	–	–	–	–
Otitis and Deafness	–	–	–	–	–	2	3	1	–	–	–	1	–
Erysipelas	–	1	–	–	–	–	–	–	–	–	1	–	–
Scrofula	–	–	–	–	1	–	–	2	–	–	–	2	–
Bubo (*Symp.*)	–	3	–	–	4	4	5	1	1	1	1	3	1
Phlegmon and Abscess	29	16	5	10	37	32	153	14	1	4	20	21	19
Ulcer	4	7	2	11	5	15	52	2	6	1	3	6	7
Psora	–	–	–	–	–	–	–	–	–	–	–	–	–
Eruptions, &c.	–	–	1	–	–	8	3	–	1	2	2	4	–
Dyspepsia and Debility	1	7	–	–	8	16	19	4	1	2	3	9	3
Scurvy	–	–	–	–	–	–	–	–	–	–	–	–	–
Dropsy	–	–	–	–	–	9	1	–	–	–	–	–	–
Worms	–	–	–	–	–	–	–	–	–	–	2	6	2
Wounds and Injuries	35	25	3	24	32	46	188	26	6	13	20	22	17
Burns and Scalds	1	1	–	–	–	3	8	–	–	2	–	–	1
Hernia	–	1	–	–	–	–	–	1	–	–	–	–	–
Fish Poison	–	–	–	–	–	–	–	–	–	–	–	–	–
Tetanus	–	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL	154	148	55	99	276	411	1,176	128	46	77	173	267	101

in each Ship on the East India and China Station—*continued.*

Odin.	Pearl.	Pioneer.	Princess Charlotte.	Renard.	Ringdove.	Roebuck.	Sampson.	Saracen.	Scout.	Simoom.	Slaney.	Snake.	Sparrowhawk.	Sphinx.	Urgent.	Vulcan.	TOTAL.
29	33	34	5	2	3	–	5	3	5	24	14	33	–	4	–	2	482
3	10	1	18	34	7	10	5	1	39	14	1	18	4	4	3	10	525
2	1	–	–	–	1	–	–	–	5	–	1	–	–	–	–	1	144
–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	3
–	–	–	1	–	1	–	–	–	1	–	–	1	1	–	–	–	9
–	–	–	–	2	1	1	2	–	2	–	–	1	–	–	–	–	16
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
–	–	–	1	–	–	–	–	–	1	–	–	–	1	–	–	3	16
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3
5	–	–	–	10	–	1	11	–	3	1	1	1	–	–	2	7	86
13	7	2	5	2	2	1	–	–	1	2	4	1	1	–	1	–	92
1	2	–	–	–	–	–	–	–	4	1	–	1	–	4	1	–	27
72	37	39	–	19	9	4	9	–	47	17	3	7	1	100	7	61	1,037
8	8	–	1	3	2	–	2	–	7	14	3	2	–	–	–	23	134
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	7
2	–	–	–	–	2	–	–	–	2	2	–	–	2	–	–	–	29
3	1	2	1	1	–	–	2	–	3	1	1	1	–	–	–	1	43
1	–	–	–	3	2	–	–	–	–	–	–	–	–	–	–	–	13
–	3	–	–	–	–	–	–	–	2	–	–	*a* 2	1	–	–	–	17
–	7	–	3	24	–	–	4	–	12	12	2	5	–	2	–	4	184
35	114	32	26	32	16	21	18	5	32	26	8	32	9	57	9	90	1,500
2	–	–	–	–	–	–	–	–	1	–	–	–	–	1	–	–	6
3	28	–	3	2	3	2	9	3	1	1	2	1	6	2	–	25	192
4	3	2	1	2	2	1	1	–	–	–	1	2	1	1	–	–	44
–	1	2	1	1	3	–	–	–	5	1	–	1	–	–	–	2	31
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
2	–	–	–	–	1	–	–	–	–	–	–	–	1	–	–	1	13
43	19	8	19	15	14	2	4	4	26	32	2	2	5	34	5	24	593
11	13	3	4	3	2	5	10	–	6	5	2	1	–	2	2	11	200
2	9	–	1	–	–	–	–	–	3	1	–	–	4	2	1	2	54
4	–	–	–	1	–	–	2	–	–	–	–	–	–	–	–	–	13
10	57	11	9	8	11	1	3	–	17	6	3	–	–	18	3	7	261
26	11	–	19	13	17	6	35	5	11	7	9	10	4	23	8	27	626
–	–	–	–	–	–	–	–	–	–	2	–	–	–	–	–	–	9
2	2	–	–	–	–	–	–	–	1	–	2	–	–	–	1	3	24
10	2	–	3	1	9	–	2	–	3	4	1	–	–	3	2	1	383
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
5	–	–	1	–	–	1	–	1	1	–	1	–	–	2	–	1	35
–	2	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	7
–	–	–	–	1	–	2	–	–	3	–	–	–	–	2	–	1	15
–	9	–	–	5	6	–	5	–	4	3	1	1	–	–	–	3	93
142	197	31	28	21	15	10	21	7	28	33	10	39	13	65	22	37	1,642
69	30	3	15	13	3	1	6	1	51	15	2	5	2	8	17	26	636
1	–	–	–	–	3	–	–	–	–	2	–	–	–	–	–	1	8
13	12	–	–	–	–	5	2	–	4	3	1	2	–	1	–	2	122
30	57	3	5	5	1	5	8	3	3	9	3	2	4	9	1	18	383
–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1
–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1	15
1	19	1	–	–	–	–	–	–	–	2	2	–	–	2	–	1	43
105	96	21	28	36	12	17	15	3	47	24	13	18	9	51	19	69	1,633
4	3	1	–	2	4	–	1	–	1	2	–	6	–	1	4	2	71
–	–	1	–	–	–	–	–	–	2	–	–	2	1	–	–	1	9
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
663	793	197	198	261	152	105	182	36	386	256	94	197	70	398	108	471	11,550

a Hæmatemesis.

AUSTRALIAN STATION.

Australian Station.

The mean force on the Australian Station corrected for time was almost the same as in the preceding year. There were seven vessels in all, with about 945 men: 1,249 cases of disease or injury were under treatment, twenty-seven of which were invalided, and thirteen died.

The average number daily under treatment was 37·8, being in the ratio of 40 per 1,000 of mean force, a somewhat smaller ratio even than that of the preceding year. The loss of service was greatest from catarrh, diarrhœa, rheumatism, boils, and wounds and injuries. The loss of service from syphilis was exceedingly small.

Fevers.—There were only nineteen cases of primary fever, and ten of an intermittent type, throughout the year. Of the nineteen cases of primary fever, twelve may be said to have been of a purely ephemeral character. From all the cases there were 479 days' sickness on board ship and in hospital; and of these, 412 days' sickness belong to eight cases in which the recovery was exceedingly protracted.

There were nineteen cases of primary fever in the Cordelia, all of which were of an ephemeral character: altogether they gave fifty-one days' sickness, not quite five days to each case.

One case of primary fever occurred in the Harrier, at Manakau, New Zealand. It was of a very urgent character, presenting both pulmonary and enteric complications. The pulmonary symptoms at first were the most urgent; the enteric affection did not assume any prominence until a month after his seizure, when he was attacked with profuse hæmorrhage from the bowels. This was checked, but he continued very low; the fever took on a remittent character, and he had several febrile accessions during the day. In this state, as the ship was about to proceed to the Feejee Islands, he was sent on shore to the military hospital at Auckland. There

There does not appear to have been any eruption in this case. One case of primary fever is returned from the Iris: it was of an exceedingly tedious character, a relapse having occurred when the man was almost fit for duty. The fever was remittent.

There were three cases of primary fever in the Miranda, which were chiefly characterised by their tardy recovery. The same may be said of the cases which occurred in the Niger and Pelorus.

Eight of the ten cases of ague occurred in the Cordelia, and several of these attacks were in a warrant officer, who is said to have contracted the disease at Newcastle, a small town to the northward of Sydney. He appears to have had his first seizure there.

Catarrh, &c.—Catarrhal affections were not so common as in the previous year. Nearly one-half of the cases appear in the returns received from the Miranda, and are referred to the changeable and frequently boisterous weather to which the crew were exposed in cruising along the south coast of Australia, and in New Zealand. Under the head of inflammation of the lungs and pleura, seven cases are returned from the Fawn: these were ordinary cases of bronchitic cough, unattended by any severe amount of bronchial inflammation.

Phthisis proved fatal to a man belonging to the Fawn. The disease had a rapid course, the first symptoms showing themselves off Cape Horn, on the homeward bound passage. He died in Woolwich Infirmary.

Stomach and Bowels.—Under this head there were four deaths, one in the Harrier and three in the Iris. The case in the Harrier is somewhat peculiar. The man was under treatment on the 22d of September for a paroxysm of ague. It subsided under the influence of large doses of quinine. On the morning of the 1st of October he appeared quite well, but in the afternoon he was suddenly seized with acute abdominal pain and nausea. Tenderness on pressure over the iliac regions speedily followed, and he complained of pain extending down the spermatic cord to the scrotum, and at the extremity of the penis. The pulse was small, 112. The urine was ammoniacal, thick and muddy, and subsequently showed traces of blood. There was considerable accompanying pyrexia. The symptoms of peritonitis progressed; vomiting became very urgent, the stomach being unable to retain even fluids; symptoms of prostration set in; he became delirious and restless, throwing himself about violently, and, after

Australian Station.

a more than usually severe struggle, he fell suddenly back on the pillow, and in a few minutes expired. On post-mortem examination of the body there appeared "extensive and diffuse inflammation of the peritonœum, with large effusion of lymph and pus in the cavity of the abdomen. The large intestines were much inflamed, adherent in many places, and covered with large patches of lymph. The inflammation was most acute about the cœcum, sigmoid flexure, and descending colon. There were large collections of pus in both iliac fossæ. No obstruction nor perforation of the intestines could be detected. The liver was enlarged, congested about the upper part of the right lobe; right kidney congested, with traces of inflammation in the ureter near the pelvis; left kidney slightly congested; spleen greatly enlarged." The history of this case appears to lead to the conclusion that the inflammatory attack had its origin in connection with some irritation in the ureter, probably dependent upon the passage of a calculus. The bladder does not appear to have been opened; at least no mention is made of it.

There were three fatal cases in the Iris during the Midsummer quarter, when the ship was on her passage to England. In two of these death was consequent upon perforation of the intestines; the third case was one of dysentery.

Liver.—A fatal case of disease of the liver occurred in an able seaman of the Miranda. The chief symptom during life was urgent diarrhœa: latterly there was some amount of ascites; there was also marked evidence of pulmonary disease. He died in the provincial Hospital at Auckland. On examination of the body, "the left lung was found to be studded with tubercles and vomicæ, and the liver was one hardened mass of disease, and shrunk to a small space within the abdomen."

Syphilis.—The few cases of this disease that appear in the returns were chiefly contracted at Sydney.

Phlegmon and Abscess.—The ratio per 1,000 of cases coming under this head is almost double that of the preceding year. There was a total loss of 3,060 days service from these affections alone, giving an average sickness of about eight and a half days to each case: they were most prevalent in the Cordelia, Fawn, and Pelorus. Under the head of phlegmon the surgeon of the Fawn makes the following remarks: "These, as in the former year, have constituted by far

far the largest portion of diseases in the nosological returns, and were often confined to the strongest and healthiest of the crew. Compared with the former Report, the numbers have now decreased considerably; the cases have also been a shorter time on the sick list, and were therefore less obstinate and inflammatory. These affections have invariably been most numerous during cruises which rendered necessary the issue of salt provisions; and it will be observed that the smallest number occurred between July and September, when the ship was in Sydney harbour, and when there was less confinement on board."

Wounds, Injuries, &c.—One man died from the effects of a gunshot wound received in action. The wound was sustained on the 29th of December 1860, and he died on the 6th of January, nine days afterwards; "the ball was found to have passed through the thoracic cavity, grazing the upper portion of the right lung, shattering the body of the second dorsal vertebra, and eventually embedding itself in the subscapular muscle." Two men were killed by falling from aloft; in one the skull was fractured, in the other there was fracture of the ribs, with rupture of the lungs and liver. Two men were drowned, one by falling overboard at sea in a gale of wind; the other by falling out of a boat which he was engaged mooring within a few yards of the ship. The mortality from wounds and injuries and drowning was in the ratio of 5·2 per 1,000 of mean force, that from all diseases being 8·5, making a total of 13·7, which is as nearly as possible the same as that of the preceding year, when it was 13·8.

Invalided.—One man was invalided for paralysis, three for phthisis, four for affections of the heart and circulating system, two for diseases of the alimentary canal, two for rheumatism, three for diseases of the special senses, one for ulcer, one for dropsy, and ten for wounds and injuries and hernia, being a total of twenty-seven, or in the ratio of 28·4 per 1,000 of mean force, a somewhat larger ratio than in the preceding year.

Table, No. 1.

Showing the Number of Cases of all Diseases and Injuries, and the Number Invalided and Dead, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever	19	20·1	—	—	—	—
Intermittent Fever	10	10·6	—	—	—	—
Epilepsy	1	1·1	—	—	—	—
Paralysis	- -	- -	1	1·1	—	—
Delirium Tremens	6	6·4	—	—	—	—
Headache, &c.	5	5·3	—	—	—	—
Inflammation of the Lungs and Pleura	14	14·8	—	—	—	—
Phthisis and Hæmoptysis	6	6·4	3	3·1	1	1·1
Influenza and Catarrh	128	135·4	—	—	—	—
Cynanche	23	24·3	—	—	—	—
Asthma	2	2·1	—	—	—	—
Functional and Organic Disease of the Heart	5	5·3	3	3·1	2	2·1
Hæmorrhoids	11	11·6	—	—	—	—
Varix	1	1·1	1	1·1	—	—
Inflammation of the Stomach and Bowels	2	2·1	1	1·1	3	3·1
Dysentery	2	2·1	- -	- -	1	1·1
Diarrhœa	87	92·1	1	1·1	—	—
Constipation and Colic	29	30·7	—	—	—	—
Inflammation of the Liver	5	5·3	—	- -	1	1·1
Jaundice	2	2·1	—	—	—	—
Syphilis	12	12·7	—	—	—	—
Gonorrhœa	8	8·4	—	—	—	—
Orchitis	8	8·4	—	—	—	—
Stricture	3	3·1	—	—	—	—

Table, No. 1.—Showing the Number of Cases of all Diseases, &c.—*continued.*

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Rheumatism - - - - -	82	86·8	2	2·1	—	—
Gout - - - - - -	3	3·1	—	—	—	—
Disease of the Bones and Joints -	2	2·1	—	—	—	—
Ophthalmia - - - - -	7	7·4	—	—	—	—
Amaurosis and Cataract - -	2	2·1	2	2·1	—	—
Otitis and Deafness - - -	2	2·1	1	1·1	—	—
Erysipelas - - - - -	2	2·1	—	—	—	—
Bubo (*Symp.*) - - - -	5	5·3	—	—	—	—
Phlegmon and Abscess - -	354	374·6	—	—	—	—
Ulcer - - - - - -	51	53·9	1	1·1	—	—
Psora - - - - - -	3	3·1	—	—	—	—
Eruptions, &c. - - - -	28	29·6	—	—	—	—
Dyspepsia and Debility - -	48	50·8	—	—	—	—
Dropsy - - - - - -	5	5·3	1	1·1	—	—
Worms - - - - - -	1	1·1	—	—	—	—
Cancer - - - - - -	1	1·1	—	—	—	—
Wounds and Injuries - - -	248	262·4	9	9·5	3	3·1
Burns and Scalds - - -	14	14·8	—	—	—	—
Hernia - - - - - -	2	2·1	1	1·1	—	—
Drowned - - - - -	- -	- -	- -	- -	2	2·1
Total - - -	1,249	1322·8	27	28·4	13	13·7

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PALL MALL

TABLE, No. 2.

SHOWING the Number of DAYS' SICKNESS from each DISEASE, and from INJURIES, the Average Number of Men Sick Daily, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever	465	14	479	1·4	1·5
Intermittent Fever - - -	75	- -	75	·2	·2
Apoplexy - - - -	- -	33	33	·1	·1
Epilepsy - - - -	2	- -	2	—	—
Delirium Tremens - - -	62	13	75	·2	·2
Headache, &c. - - -	17	- -	17	—	—
Inflammation of the Lungs and Pleura - - - -	203	154	357	·9	1·
Phthisis and Hæmoptysis -	116	- -	116	·3	·3
Influenza and Catarrh - -	679	- -	679	1·9	2·
Cynanche - - - -	102	- -	102	·3	·3
Asthma - - - - -	21	- -	21	—	—
Functional and Organic Disease of the Heart - - -	207	236	443	1·2	1·3
Hæmorrhoids - - -	91	- -	91	·3	·3
Varix - - - - -	1	- -	1	—	—
Inflammation of the Stomach and Bowels - - -	24	- -	24	—	—
Dysentery - - - -	55	52	107	·3	·3
Diarrhœa - - - -	477	18	495	1·4	1·5
Constipation and Colic - -	130	- -	130	·4	·4
Inflammation of the Liver -	119	89	208	·6	·6
Jaundice - - - -	24	- -	24	—	—

Table, No. 2.—Showing the Number of Days' Sickness from each Disease, &c.—*contd.*

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Syphilis - - - -	315	- -	315	·9	1·
Gonorrhœa - - - -	121	- -	121	·3	·3
Orchitis - - - -	176	- -	176	·5	·5
Stricture - - - -	11	- -	11	—	—
Rheumatism - - -	992	172	1,164	3·2	·3
Gout - - - - -	15	- -	15	—	—
Disease of the Bones and Joints	37	- -	37	—	—
Ophthalmia - - - -	50	- -	50	·2	·2
Amaurosis and Cataract - -	50	- -	50	·2	·2
Otitis and Deafness - -	9	- -	9	—	—
Erysipelas - - - -	100	- -	100	·3	·3
Bubo (*Symp.*) - - -	38	- -	38	·1	·1
Phlegmon and Abscess - -	2,911	149	3,060	8·4	8·9
Ulcer - - - - -	1,210	- -	1,210	3·3	3·5
Psora - - - - -	22	- -	22	—	—
Eruptions, &c. - - -	210	- -	210	·6	·6
Dyspepsia and Debility - -	230	- -	230	·7	·7
Dropsy - - - - -	106	43	149	·4	·4
Worms - - - - -	4	- -	4	—	—
Wounds and Injuries - -	2,718	375	3,093	8·5	9·
Burns and Scalds - - -	194	- -	194	·5	·5
Hernia - - - - -	46	- -	46	·1	·1
Total - - -	12,435	1,348	13,783	37·8	40·

Table, No. 3.

Showing the Number Invalided from each Ship employed on the Australian Station.

CAUSE OF INVALIDING.	Cordelia.	Fawn.	Harrier.	Miranda.	Niger.	Pelorus.	Total.
Paralysis - - - - -	1	–	–	–	–	–	1
Phthisis and Hæmoptysis - -	–	1	1	–	–	1	3
Functional and Organic Disease of the Heart - - - -	–	3	–	–	–	–	3
Varix - - - - -	–	1	–	–	–	–	1
Hæmatemesis - - - -	–	1	–	–	–	–	1
Diarrhœa - - - - - -	–	–	–	1	–	–	1
Rheumatism - - - -	–	1	–	1	–	–	2
Amaurosis and Cataract - -	–	–	–	1	–	1	2
Deafness - - - - -	–	–	–	–	–	1	1
Ulcer - - - - -	–	–	–	–	–	1	1
Dropsy - - - - -	–	1	–	–	–	–	1
Wounds and Injuries - - -	–	–	–	–	2	7	9
Hernia - - - - -	–	–	1	–	–	–	1
Total - - -	1	8	2	3	2	11	27

TABLE, No. 4.

SHOWING the Number of DEATHS in each Ship employed on the AUSTRALIAN Station.

CAUSE of DEATH.	Fawn.	Harrier.	Iris.	Miranda.	Niger.	Pelorus.	TOTAL.
Phthisis - - - - -	–	–	–	–	1	–	1
Functional and Organic Disease of the Heart - - - -	2	–	–	–	–	–	2
Disease of the Stomach and Bowels	–	1	2	–	–	–	3
Dysentery - - - - -	–	–	1	–	–	–	1
Disease of the Liver - - -	–	–	–	1	–	–	1
Killed in Action - - -	–	–	–	–	–	1	1
Wounds and Injuries - - -	–	–	–	–	–	2	2
Drowned - - - - -	1	–	–	–	1	–	2
TOTAL - - -	3	1	3	1	2	3	13

TABLE, No. 5.

SHOWING the Names of the SHIPS; the Average Complements and the Mean Force; the Total Number of Cases in each Ship; the Total Number of Days' Sickness on Board; and the Average Number of Men Sick Daily.

C. S. Station changed. P. O. Paid off.

NAME of SHIP.	Number of Guns, Horse Power, &c.	Period.	Average Complement.	Mean Force of each Ship.	Number of Cases.	Number of Days' Sickness on Board.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force of each Ship.	Number discharged to Hospital.
Cordelia - -	11 Sc. - 150	year	110	110	285	1,785	4·9	44·5	3
Fawn - -	17 Sc. - 100	year	135	135	212	2,478	6·8	50·3	1
Harrier - C. S.	17 Sc. - 100	6 mo.	160	80	157	1,776	4·9	61·2	2
Iris - P. O.	26 - -	7 mo.	190	110	60	844	2·3	20·9	1
Miranda - C. S.	15 Sc. - 250	9 mo.	170	130	174	1,950	5·3	40·8	4
Niger - P. O.	13 Sc. - 400	8 mo.	180	120	156	1,270	3·5	29·2	6
Pelorus - -	21 Sc. - 400	year	260	260	205	2,351	6·4	24·6	4

TABLE, No. 6.

SHOWING the Number of CASES of all DISEASES and INJURIES in each Ship employed on the AUSTRALIAN Station.

DISEASE OR INJURY.	Cordelia.	Fawn.	Harrier.	Iris.	Miranda.	Niger.	Pelorus.	TOTAL.
Continued and Remittent Fever	11	–	1	1	3	2	1	19
Intermittent Fever	8	1	1	1	–	–	–	10
Epilepsy	1	–	–	–	–	–	–	1
Delirium Tremens	–	1	–	4	1	–	–	6
Headache, &c.	4	–	–	–	–	–	1	5
Inflammation of the Lungs and Pleura	3	7	2	–	–	1	1	14
Phthisis and Hæmoptysis	1	1	1	–	–	2	1	6
Catarrh	11	14	17	–	59	11	16	128
Cynanche	1	6	7	–	–	5	4	23
Asthma	1	–	–	–	–	1	–	2
Functional and Organic Disease of the Heart	1	2	–	2	–	–	–	5
Hæmorrhoids	7	–	–	1	–	1	2	11
Varix	–	1	–	–	–	–	–	1
Inflammation of the Stomach and Bowels	–	*a*1	–	1	–	–	–	2
Dysentery	–	–	–	1	1	–	–	2
Diarrhœa	23	8	8	1	12	16	19	87
Constipation and Colic	13	2	5	–	–	9	–	29
Inflammation of the Liver	1	1	–	–	–	3	–	5
Jaundice	–	1	–	1	–	–	–	2
Syphilis	3	6	–	1	1	–	1	12
Gonorrhœa	5	2	–	–	–	–	1	8
Orchitis	3	3	–	1	–	1	–	8
Stricture	2	–	–	1	–	–	–	3
Rheumatism	23	7	12	2	14	19	5	82
Gout	2	–	–	–	–	1	–	3
Disease of the Bones and Joints	–	–	–	1	–	–	1	2
Inflammation of the Eyes	1	–	–	–	2	3	1	7
Amaurosis and Cataract	1	–	–	–	1	–	–	2
Otitis and Deafness	1	–	–	–	–	–	1	2
Erysipelas	1	–	–	–	–	–	1	2
Bubo (*Symp.*)	1	–	2	–	–	1	1	5
Phlegmon and Abscess	77	73	35	20	43	42	64	354
Ulcer	5	7	13	1	6	8	11	51
Psora	–	–	2	–	–	–	1	3
Eruptions	3	1	9	–	5	3	7	28
Dyspepsia and Debility	17	17	7	–	–	6	1	48
Dropsy	–	1	–	–	–	–	4	5
Worms	–	–	–	–	–	1	–	1
Cancer	–	–	–	–	–	1	–	1
Wounds and Injuries	52	48	29	18	24	19	58	248
Burns and Scalds	2	1	5	2	2	–	2	14
Hernia	–	–	1	1	–	–	–	2
TOTAL	285	212	157	60	174	156	205	1,249

a Hæmatemesis.

IRREGULAR FORCE.

Irregular Force.

The Irregular Force in 1861 consisted of fifty-six vessels and a battalion of marines under orders for service in México. The mean force corrected for time was 3,730. The number of cases of all diseases and injuries under treatment was 6,396, being in the ratio of 1714·7 per 1,000; the period occupied in the treatment of these cases on board ship and in hospital was 101,340 days, which was equal to a daily loss of service of 277·6 men from the force, or in the ratio of 77·4 per 1,000. Of these cases ninety-nine were invalided and thirty-nine died, being in the ratio in the former of 26·5, and in the latter of 10·4 per 1,000.

As usual with this force, the largest loss of service was from venereal disease. The loss to the public service from syphilis alone was equal to 21,760 days, and from gonorrhœa to 3,639 days, being altogether 25,399 days, or as nearly as possible one-fourth of all the loss of service from all diseases and injuries. Even did the matter end here, this would be a large bill of sickness; but when it is considered how much subsequent loss of service is traceable to these attacks, how many of the cases of rheumatism, of diseases of the bones, of the nervous system, and even of the lungs, may be referred to the fearful taint acquired at this time, and how many men, from the generally cachectic condition of their systems thus begotten, are unable to resist the various climatic influences to which they are exposed, and succumb, in consequence, to causes which they would otherwise have been quite equal to cope with, the magnitude of the evil cannot be over-estimated. That it is remediable there cannot be a doubt, and that, so far as this Force is concerned, it is in our own hands, is apparent

Irregular Force.

apparent from the fact that almost all these cases were contracted in our own seaports.

The largest loss of service next to venereal disease was from wounds and injuries, boils, ulcers and rheumatism. These affections are such as might be expected in a force the largest portion of which was employed fitting out for foreign service. The duties devolving upon ships' companies at such a time are of a character to expose them to injuries of a more or less severe nature, while the general condition of newly commissioned men, the majority of whom have been for some time previously leading an irregular, and in most cases a very dissipated life, is such as to conduce to the formation of boils and ulcers, and to rheumatic affections on slight exposure.

Fevers.—There were 159 cases of primary fever, only four of which had a fatal termination. The total loss of service from these cases on board ship and in hospital was 1,958 days, giving an average of twelve and a half days to each case.

There were sixty cases of primary fever in the Ariadne, one of which proved fatal. This case presented some features of interest, from the fact of its running a very rapid course, and being associated at its termination with black vomit: it occurred at Halifax. The patient was a petty officer, forty-five years of age; and although he appears to have been a quiet, steady, sober man, his system seems to have fallen into rather a low condition, as he was at the time of his seizure suffering from nyctalopia, a symptom commonly associated with a slightly scorbutic taint. He was subject to attacks of intermittent fever, and his first seizure in the present instance was one of ague. On the 28th of September he had an attack of ague, which went through its regular stages. On the afternoon of the 29th he had a second attack. On the 30th the attack came on about noon; the intervals between these paroxysms were marked by distinct intermissions. On the 1st of October the accession seemed to have been warded off by the quinine, a large dose of which had been given half an hour before the expected attack; but in the evening pyrexial symptoms set in, and that night the fever ran high, and he was delirious; at the morning visit, on the 2d, however, he was quite collected, and at 4·30 p. m.

p.m. he felt better, and was free from fever. The febrile accession again came on in the evening, and during that night and the morning of the 3d he could not be roused to answer questions. During the 3d there was a remission of the febrile symptoms, but again in the evening, they returned. At 10 p.m. he vomited a small quantity of dark coloured grumous matter; and at 6·30 of the morning of the 4th he brought up six or eight ounces of black vomit. After this he sank rapidly, and died at 9 a.m. During all this time he passed urine freely, and latterly involuntarily. This case presents all the characters of what is ordinarily termed bilious remittent fever. The other cases that were under treatment in the Ariadne were chiefly of a mild description.

There were seventeen cases of primary fever in the Emerald, twelve in the Orestes, and nineteen in the Spiteful. They were almost all of an ephemeral character, their average duration being from five to six or seven days.

Eruptive Fevers.—There were nineteen cases of small-pox altogether, thirteen of which were in the Emerald. All the cases in the Emerald occurred while the ship was lying in Hamoaze. The disease was epidemic in Devonport at the time, and the ship's company having abundance of leave, had every facility for contracting it. Eleven of the cases occurred in January and two in February. In four of these there were good vaccination marks, in three fair marks, in two the marks were indistinct, and in three there were no marks at all; one of them had had small-pox before. One case proved fatal: this occurred in the person of a coloured man, who had not been vaccinated. "Two of the patients who had not been vaccinated were respectively forty-one and fifty days in hospital; one showing fair marks, was thirty-eight days under treatment there, while three others bearing good marks were respectively seven, eight, and forty-nine days absent from their ship. The man who showed marks of having had small-pox was absent only eight days."

Two cases of small-pox are returned from the Charybdis; the disease was introduced into the ship at Devonport, and became developed when she was at sea. The case in the Himalaya

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Himalaya was contracted at Portsmouth, and the cases in the Sanspareil and Spiteful at Plymouth.

There was a case of scarlatina in the Emerald; two cases of measles in the Himalaya, three in the marine battalion, and five in the Sanspareil. There was no loss by death from these diseases.

Brain and Nervous System.—There were seventy-eight cases of disease under this head; six of these were invalided, and two died. Three of those invalided were for epilepsy, two for paralysis, and one for insanity. Both the fatal cases were of an apoplectic character. There were eighteen cases of delirium tremens.

Respiratory Organs.—There were sixty-eight cases of inflammation of the lungs and pleura, of which one was invalided and seven died. Of thirty-six cases of phthisis and hæmoptysis, twenty-seven were invalided, and four died. One man was invalided for asthma. There were 669 cases of catarrh, and 196 cases of cynanche under treatment. There is a great reduction in the former affections as compared with the preceding year, but the ratio of the latter is almost identical with that of 1860. There was no loss either by death or invalidings from either of these affections.

Heart and Blood Vessels.—Of twenty-four cases of functional and organic disease of the heart, five were invalided, and one died. One man was invalided for varicose veins. The ratio of diseases coming under this head is somewhat less than that of last year.

Diseases of the Stomach and Bowels.—Under this head 361 cases are returned. Under general inflammatory affections there are eight cases, one of which proved fatal. This case was returned as hæmatemesis, with which symptom the man was sent into hospital. Hæmoptysis, however, preceded death; and from the post-mortem examination it would appear that the hæmorrhage, even from the first, had been from the lungs. There were fourteen cases of dysentery, in almost

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almost all of which the disease had been originally contracted in China. The cases of diarrhœa were chiefly of a trivial character, giving an average, however, of about six days' confinement on the sick list to each case. One fatal case is returned from the Ganges: it appears to have been of a more complicated nature than a simple diarrhœa. The man was placed on the sick list on the 9th of May, at Sheerness, when the ship was paying off, and died in Melville Hospital on the 13th.

Genito-Urinary System.—The ratio of venereal diseases exceeds that of last year. In 1860 the ratio of syphilis was 120·3 per 1,000, and of gonorrhœa 48·1. This year it is for syphilis 155·2, and for gonorrhœa 53·6. The ships in which the diseases were most prevalent were the Ariadne, Emerald, Himalaya, and Sanspareil.

In the Ariadne there were seventy-six cases of syphilis and sixteen of gonorrhœa. During the two first quarters of the year the ship was in the home ports at Plymouth and Sheerness, and she was also cruising as far as Lisbon and Gibraltar. These diseases seem to have been entirely contracted at the two former seaports. In the Emerald, which suffered severely during the preceding year from syphilis, contracted at Devonport and Portsmouth, there were one hundred and thirty-eight cases of syphilis, and twenty of gonorrhœa. This vessel was for the first six months of the year lying at Plymouth; and during the Christmas quarter, in consequence of damages sustained in heavy weather, she was also obliged to be a good deal in port there. The surgeon, in his report for the last quarter of the year, says, " In consequence of the ship being a considerable time in port at Plymouth during the necessary repairs, the amount of syphilis has been very great, and in most cases very severe. Indeed I do not know any port in which the disease appears to be so prevalent and so virulent. The number of days' sickness from this disease also, as shown in the accompanying return, is more than one-third of the whole amount of sickness. The cases of syphilis that have been under treatment have been nearly all primary affections; very few cases of secondary disease have shown themselves."

There were thirty-nine cases of syphilis and two of gonorrhœa in the Himalaya, thirty-one cases of syphilis, and four

Irregular Force.

four of gonorrhœa in the Megæra, and forty-six cases of syphilis and six of gonorrhœa in the Sanspareil. These ships were employed in conveying troops; and, from lying for considerable periods at different times in the home ports, their men had ample opportunities of indulging in every kind of excess.

Wounds, Injuries, &c.—There were four deaths from fracture of the skull, two of these occasioned by falls from aloft, one by a blow from a block, and one by a quantity of heavy gear falling upon the man from aloft. Death resulted in one case from fracture and dislocation of a cervical vertebra: during the ceremony of shaving on crossing the line, the man jumped from the bridge of the vessel into a sail, which he seems to have supposed contained more water than it did. He pitched upon his head, and this injury was the consequence. A man was killed by a block striking him violently on the back, and fracturing several dorsal vertebræ; and a marine on guard over some Government stores at Gibraltar was killed by falling over a cliff.

Two men were drowned by being washed off the jib-boom. One man was drowned while bathing at Rio Janeiro. A man was drowned by missing his footing, and falling overboard from the ship's side, where he was employed cleaning the paint work. Two men were drowned from their ship, one by falling and the other by jumping overboard, under what circumstances is not stated; three men were drowned by falling overboard from boats; and one man who was drowned is supposed to have fallen into the water from the brow between the ship and the dockyard wharf while in a state of intoxication; a man was suffocated by the impaction of some masses of food which had been drawn into the larynx during the act of vomiting. The total loss from deaths under this head amounted to eighteen; seven from wounds and injuries, ten from drowning, and one from suffocation.

Invalided.—Six men were invalided for diseases of the brain and nervous system; twenty-nine for diseases of the respiratory organs, twenty-seven of these being for phthisis: five for functional and organic diseases of the heart; one for varicose veins; two for dysentery; one for disease of the liver;

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liver; eight for diseases of the genito-urinary organs; eight for rheumatism; two for diseases of the bones and joints; four for diseases of the special senses; twelve for various affections of the skin or cellular tissue; six for diseases not classed, three of which were dyspepsia; six for wounds and injuries, and nine for hernia; making altogether ninety-nine, or in the ratio of 26·5 per 1,000 of corrected force, being as nearly as possible in the same ratio as the preceding year.

REFORM CLUB PALL MALL

Table, No. 1.

Showing the Number of Cases of all Diseases and Injuries, and the Number Invalided and Dead, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever	158	42·4	- -	- -	4	1·1
Yellow Fever	1	·3	—	—	—	—
Intermittent Fever	56	15·	—	—	—	—
Small-pox	19	5·1	- -	- -	1	·3
Measles	10	2·7	—	—	—	—
Scarlatina	1	·3	—	—	—	—
Disease of the Brain	2	·5	—	—	—	—
Apoplexy	2	·5	- -	- -	2	·5
Epilepsy	14	3·8	3	·8	—	—
Paralysis	2	·5	2	·5	—	—
Insanity	5	1·3	1	·3	—	—
Delirium Tremens	18	4·8	—	—	—	—
Headache, &c.	35	9·4	—	—	—	—
Inflammation of the Lungs and Pleura	68	18·2	1	·3	7	1·9
Phthisis and Hæmoptysis	36	9·7	27	7·2	4	1·1
Influenza and Catarrh	669	179·3	—	—	—	—
Cynanche	196	52·5	—	—	—	—
Asthma	1	·3	1	·3	—	—
Functional and Organic Disease of the Heart	24	6·4	5	1·3	1	·3
Hæmorrhoids	16	4·3	—	—	—	—
Varix	3	·8	1	·3	—	—
Inflammation of the Stomach and Bowels	8	2·1	- -	- -	1	·3
Dysentery	14	3·8	2	·5	—	—
Diarrhœa	267	71·6	- -	- -	1	·3
Constipation and Colic	72	19·3	—	—	—	—
Inflammation of the Liver	5	1·3	1	·3	—	—
Jaundice	8	2·1	—	—	—	—

TABLE, No. 1.—Showing the Number of Cases of all Diseases, &c.—*continued.*

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Inflammation of the Bladder and Kidneys - - - -	10	2·7	1	·3	—	—
Syphilis - - - - - -	579	155·2	2	·5	—	—
Gonorrhœa - - - -	200	53·6	—	—	—	—
Orchitis - - - - -	108	29·	1	·3	—	—
Stricture - - - - -	35	9·4	2	·5	—	—
Incontinence of Urine, &c. -	15	4·	2	·5	—	—
Rheumatism - - - - -	370	99·2	8	2·1	—	—
Gout - - - - - -	11	2·9	—	—	—	—
Disease of the Bones and Joints -	14	3·8	2	·5	—	—
Ophthalmia - - - -	60	16·1	1	·3	—	—
Amaurosis and Cataract - -	4	1·1	2	·5	—	—
Otitis and Deafness - - -	15	4·	1	·3	—	—
Erysipelas - - - - -	23	6·2	1	·3	—	—
Scrofula - - - - - -	13	3·5	3	·8	—	—
Bubo (*Symp.*) - - - -	72	19·3	—	—	—	—
Phlegmon and Abscess - -	1,072	287·4	1	·3	—	—
Ulcer - - - - - -	333	89·3	6	1·6	—	—
Psora - - - - - -	163	43·7	—	—	—	—
Eruptions, &c. - - - -	92	24·7	1	·3	—	—
Dyspepsia and Debility -	227	60·9	3	·8	—	—
Scurvy - - - - - -	9	2·4	1	·3	—	—
Dropsy - - - - - -	11	2·9	2	·5	—	—
Worms - - - - - -	4	1·1	—	—	—	—
Gangrene - - - - -	1	·3	—	—	—	—
Wounds and Injuries - - -	1,165	312·3	6	1·6	7	1·9
Burns and Scalds - - -	69	18·5	—	—	—	—
Hernia - - - - - -	10	2·7	9	2·4	—	—
Drowned - - - - -	- -	- -	- -	- -	10	2·7
Poison - - - - - -	1	·3	—	—	—	—
Asphyxia - - - - -	- -	- -	- -	- -	1	·3
TOTAL - - -	6,396	1714·7	99	26·5	39	10·4

TABLE, No. 2.

SHOWING the Number of DAYS' SICKNESS from each DISEASE, and from INJURIES, the Average Number of Men Sick Daily, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever	1,362	616	1,978	5·4	1·4
Intermittent Fever - - -	343	118	461	1·3	·3
Small-pox - - - -	99	309	408	1·1	·3
Measles - - - - -	88	17	105	·3	—
Scarlatina - - - -	36	296	332	·9	·2
Disease of the Brain - -	37	53	90	·3	—
Apoplexy - - - -	1	15	16	—	—
Epilepsy - - - -	68	154	222	·6	·2
Paralysis - - - -	64	541	605	1·6	·4
Insanity - - - - -	54	71	125	·3	—
Delirium Tremens - - -	73	170	243	·7	·2
Headache, &c. - - -	299	90	389	1·1	·3
Inflammation of the Lungs and Pleura - - - -	811	2,032	2,843	7·8	2·1
Phthisis and Hæmoptysis -	780	2,192	2,972	8·2	2·2
Influenza and Catarrh - -	4,453	754	3,207	8·8	2·4
Cynanche - - - -	1,329	174	1,503	4·4	1·1
Asthma - - - - -	- -	25	25	—	—
Functional and Organic Disease of the Heart - - -	270	934	1,204	3·3	·9
Hæmorrhoids - - - -	150	14	164	·5	·1
Varix - - - - -	11	3	14	—	—
Inflammation of the Stomach and Bowels - - -	105	161	266	·7	·2
Dysentery - - - -	188	368	556	1·5	·4
Diarrhœa - - - -	1,561	114	1,675	4·6	1·2
Constipation and Colic - -	251	19	270	·7	·2
Inflaammtion of the Liver -	148	179	327	·9	·2
Jaundice - - - -	86	77	163	·5	·1
Splenitis - - - -	- -	11	11	—	—

TABLE, No. 2.—Showing the Number of Days' Sickness from each Disease, &c.—*cont*^d.

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Inflammation of the Bladder and Kidneys	116	167	283	·8	·2
Syphilis	11,970	9,798	1,760	59·6	16·
Gonorrhœa	3,151	488	3,639	9·9	2·7
Orchitis	1,550	456	2,006	5·5	1·5
Stricture	204	376	580	1·6	·4
Incontinence of Urine, &c.	107	73	180	·5	·1
Rheumatism	4,188	2,930	7,118	19·6	6·3
Gout	215	21	236	·7	·2
Disease of the Bones and Joints	288	636	924	2·6	·7
Ophthalmia	577	241	818	2·2	·6
Amaurosis and Cataract	17	63	80	—	—
Otitis and Deafness	159	68	227	·6	·1
Erysipelas	367	154	521	1·5	·4
Scrofula	268	251	519	1·4	·4
Bubo (*Symp.*)	1,446	299	1,745	4·8	1·3
Phlegmon and Abscess	9,034	1,259	10,293	28·3	7·6
Ulcer	6,299	2,192	8,491	23·3	6·2
Psora	1,520	47	1,567	4·2	1·1
Eruptions, &c.	1,032	440	1,472	4·	—
Dyspepsia and Debility	1,261	731	1,992	5·5	1·5
Scurvy	172	- -	172	·5	·1
Dropsy	98	209	307	·8	·2
Worms	25	10	35	—	—
Gangrene	28	- -	28	—	—
Wounds and Injuries	11,206	1,980	13,186	33·4	10·
Burns and Scalds	730	46	776	2·1	·6
Hernia	147	40	187	·5	·1
Poison	12	12	24	—	—
TOTAL	68,854	32,486	101,340	277·6	74·4

TABLE, No. 3.

SHOWING the Number INVALIDED from each

CAUSE of INVALIDING.	Ariadne.	Charybdis.	Desperate.	Dragon.	Driver.	Emerald.	Firebrand.	Ganges.	Griffon.	Harrier.
Insanity	–	–	–	–	–	–	–	–	–	–
Paralysis	–	–	–	–	–	–	–	–	–	2
Epilepsy	1	–	–	–	–	–	–	–	–	–
Inflammation of the Lungs	–	–	–	–	–	–	–	–	1	–
Phthisis and Hæmoptysis	6	1	–	–	2	2	–	1	–	–
Asthma	–	–	–	–	–	1	–	–	–	–
Functional and Organic Disease of the Heart	1	–	–	–	–	2	–	–	–	–
Varix	–	1	–	–	–	–	–	–	–	–
Dysentery	1	–	–	–	–	–	–	–	–	–
Disease of the Liver	–	–	–	–	–	–	–	–	–	1
Disease of the Kidneys	–	–	–	–	–	1	–	–	–	–
Syphilis	–	–	–	–	–	2	–	–	–	–
Orchitis	–	1	–	–	–	–	–	–	–	–
Stricture	–	–	–	–	–	–	–	1	–	–
Incontinence of Urine, &c.	–	–	–	–	1	–	1	–	–	–
Rheumatism	3	–	–	–	1	1	–	–	–	–
Disease of the Bones and Joints	1	–	–	–	–	–	–	1	–	–
Polypus of Ear	–	–	–	–	–	–	–	–	–	–
Inflammation of the Eyes	–	–	–	–	–	–	–	–	–	–
Amaurosis and Cataract	–	1	–	–	–	–	–	–	–	–
Erysipelas	–	–	–	–	–	–	–	–	1	–
Abscess	–	–	1	–	–	–	–	–	–	–
Ulcer	1	–	–	–	–	3	–	–	–	–
Scrofula	–	–	–	1	–	1	–	–	–	–
Tumor	–	–	–	–	–	–	–	–	–	–
Dyspepsia and Debility	–	–	–	–	–	1	1	–	–	–
Dropsy	1	–	–	–	–	1	–	–	–	–
Scurvy	–	–	–	–	–	1	–	–	–	–
Wounds and Injuries	2	–	–	–	–	–	1	2	–	–
Hernia	1	1	–	–	1	1	*a* 1	1	–	–
TOTAL	18	5	1	1	5	17	4	6	2	3

a Hepatic.

Table, No. 3.

Ship employed in the Irregular Force.

Herald.	Himalaya.	Marine Battalion, en route to Mexico.	Medea.	Megæra.	Miranda.	Orestes.	Pantaloon.	Rinaldo.	Royal Albert.	Satellite.	Spiteful.	Supply.	Virago.	Vixen.	Total.
–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
–	–	–	–	–	–	–	–	1	–	–	–	1	–	–	3
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	3	1	–	4	1	–	1	–	2	–	2	–	1	–	27
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	1	–	–	–	–	–	–	–	–	1	–	–	5
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	2
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	2
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
–	–	–	–	–	1	1	–	–	–	–	–	–	–	1	8
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	1
–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	2
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	1	–	–	1	–	–	–	–	–	–	6
–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	3
–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	1
–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	3
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	6
2	–	–	–	–	–	1	–	–	–	–	–	–	–	–	9
2	3	1	1	5	3	5	1	2	2	3	2	2	3	2	99

TABLE, No. 4.

SHOWING the Number of DEATHS in each Ship employed in the IRREGULAR Force.

CAUSE of DEATH.	Ariadne.	Devastation.	Emerald.	Ganges.	Himalaya.	Malacca.	Marine Battalion *en route* to Mexico.	Miranda.	Osborne.	Phaeton.	Plover.	Sanspareil.	Spiteful.	Supply.	Virago.	TOTAL.
Continued and Remittent Fever - - -	1	–	–	1	–	–	1	–	–	–	–	–	1	–	–	4
Small-pox - - -	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1
Apoplexy - - -	–	1	–	–	–	–	–	–	1	–	–	–	–	–	–	2
Inflammation of the Lungs and Pleura -	2	–	1	–	3	–	–	1	–	–	–	–	–	–	–	7
Phthisis and Hæmoptysis	1	–	2	–	–	–	–	–	–	–	–	–	–	1	–	4
Disease of the Heart -	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	1
Hæmatemesis - -	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1
Diarrhœa - - -	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1
Wounds and Injuries -	2	–	2	–	–	–	–	–	–	1	–	1	–	–	1	7
Drowned - - -	5	–	1	1	1	–	–	–	–	–	2	–	–	–	–	10
Suffocated - - -	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1
TOTAL - - -	11	1	9	3	4	1	1	1	1	1	2	1	1	1	1	39

Table, No. 5.

Showing the Names of the Ships; the Average Complements and the Mean Force; the Total Number of Cases in each Ship; the Total Number of Days' Sickness on Board, and the Average Number of Men Sick Daily.

C. Commissioned. P. O. Paid off. C. S. Station changed. W. Wrecked. D., Returns Defective.

NAME OF SHIP.	Number of Guns, Horse Power, &c.	Period.	Average Complement.	Mean Force of each Ship.	Number of Cases.	Number of Days' Sickness on Board.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force of each Ship.	Number Discharged to Hospital.
Antelope C.	3 P. W. 260	6 weeks	100	10	28	194	·5	50·	2
Ariadnê -	26 Sc. 800	year	480	480	941	13,327	36·5	76·	63
Aurora C.; P. O.	51 Sc. 400	1 mo.	135	10	26	152	·4	40·	-
Black Princc C.; P. O.	40 Sc. 1,250	1 mo.	450	35	40	146	·4	11·4	-
Chameleon C.	17 Sc. 200	7 mo.	200	115	151	1,264	3·4	29·6	6
Challenger C.	22 Sc. 400	2 mo.	300	50	102	674	1·8	36·	7
Chanticleer C.	17 Sc. 200	1 mo.	175	15	11	42	·1	6·7	1
Charybdis -	21 Sc. 400	3 mo.	270	70	115	1,692	4·6	65·7	1
Cockatrice C.	2 Sc. 60	4 mo.	40	15	16	115	·3	20·	3
Cygnet C.	5 Sc. 80	2 mo.	70	10	10	67	·2	20·	3
Defence C.	16 Sc. 600	1 mo.	310	25	67	360	1·	40·	2
Defiance C.; P. O.	89 Sc. 800	1 mo.	175	15	24	99	·3	20.	3
Desperate C. S.	7 Sc. 400	3 mo.	170	40	80	961	2·6	65·	8
Devastation C.	6 P. W. 400	1 mo.	150	10	5	18	-	-	1
Doterel C.	2 Sc. 60	2 mo.	40	5	9	182	·5	100·	-
Dragon C.; P. O.	6 P. W. 560	1 mo.	170	15	7	43	·1	6·7	-
Driver C.; W.	6 P. W. 280	6 weeks	165	20	51	374	1·	50·	1
Emerald -	35 Sc. 600	year	600	600	808	10,449	28·6	47·7	114
Firebrand C. S.	6 P. W. 410	3 mo.	170	40	93	900	2·5	62·5	12
Ganges P. O.	84 - - -	4 mo.	680	225	349	5,168	14·2	63·1	30
Greyhound D.; C. S.	17 Sc. 200	2 mo.	170	30	44	346	·9	30·	-
Griffon C.	5 Sc. 80	3 mo.	80	20	46	377	1·	50·	-
Harrier -	17 Sc. 100	6 mo.	180	90	233	2,770	7·6	84·4	3
Herald P. O.	8 - - -	6 mo.	115	55	72	918	2·5	45·5	3
Himalaya P. O.	6 Sc. 700	3 mo.	195	50	89	882	2·4	48·	7
Himalaya C.	6 Sc. 700	6 mo.	200	100	277	2,188	6·	60·	16
Industry P. O.	2 Sc. 80	5 mo.	60	25	31	234	·6	24·	1
Industry C.	2 Sc. 80	6 mo.	60	30	53	342	·9	30·	3
Malacca C.	17 Sc. 200	5 mo.	215	80	85	2,680	7·3	85·9	9
Marine Battalion, *en route* to Mexico C.	- - -	2 mo.	700	115	105	1,414	3·9	33·9	10
Medea C.	6 P. W. 350	3 mo.	130	30	46	468	1·3	43·3	9
Megæra -	6 Sc. 350	year	160	160	259	3,105	8·5	53·1	26
Miranda -	15 Sc. 250	3 mo.	220	55	73	·872	2·3	41·8	1
Nimble C.	5 Sc. 80	1 mo.	60	5	2	9	-	-	1
Orestes C.	21 Sc. 400	4 mo.	270	90	317	3,222	8·8	97·8	24
Orlando C.	46 Sc. 1,000	½ mo.	270	10	61	191	·5	50·	11
Orpheus C.	21 Sc. 400	2 mo.	240	40	99	845	2·3	57·5	9
Osborne -	2 P. W. 430	year	90	90	57	398	1·1	12·2	6
Pantaloon C.	11 Sc. 150	4 mo.	125	40	77	633	1·7	42·5	4
Pelican C.	17 Sc. 200	1 mo.	170	15	13	56	2	13·3	-
Penguin C.	5 Sc. 80	2 mo.	55	10	11	80	·2	20·	2
Phaeton C.	39 Sc. 400	2 mo.	565	95	259	2,275	6·2	65·3	5
Plover C.	5 Sc. 80	4 mo.	65	20	51	394	1·1	55·	3
Procris C.	2 Sc. 60	1 mo.	30	5	5	27	·1	20·	1
Rinaldo C.	17 Sc. 200	2 mo.	165	25	38	207	·6	24·	17
Royal Albert P. O.	121 Sc. 500	1 mo.	1,055	90	43	293	·8	8·9	10
Sanspareil C.	70 Sc. 400	6 mo.	455	225	310	3,637	10·	44·4	11
Satellite C.	21 Sc. 400	½ mo.	260	10	39	191	·5	50·	1
Spider C.	2 Sc. 60	1 mo.	40	5	5	19	·1	20·	4
Spiteful C. S.	6 P. W. 280	3 mo.	170	40	137	999	2·7	67·5	20
Spitfire P. O.	5 P. W. 140	2 mo.	65	10	9	46	·1	10·	1
Supply -	2 Sc. 80	year	55	55	72	808	2·2	40·	10
Trident C.	6 P. W. 350	8 mo.	90	60	160	1,207	3·3	55·	25
Triton P. O.	3 P. W. 260	1 mo.	75	5	8	49	·1	20·	-
Virago C.	6 P. W. 300	4 mo.	160	55	158	1,173	3·2	58·2	26
Vixen P. O.	6 P. W. 280	3 mo.	160	40	46	858	2·4	60·	5
Wanderer C.	4 Sc. 200	3 mo.	85	20	32	274	·8	40·	1
Weser C.	6 P. W. 160	3 mo.	60	15	26	175	·5	33·3	2
Wye C.	Sc. 100	2 mo.	70	10	15	122	·3	30·	3

TABLE, No. 6. - - - - - - - -

SHOWING the Number of CASES of all DISEASES and INJURIES - - - -

DISEASE OR INJURY.	Antelope.	Ariadne.	Aurora.	Black Prince.	Chameleon.	Challenger.	Chanticleer.	Charybdis.	Cockatrice.	Cygnet.	Defence.	Defiance.	Desperate.	Devastation.	Doterel.	Dragon.	Driver.	Emerald.	Firebrand.	Ganges.
Continued and Remittent Fever - - - -	3	59	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	17	–	2
Yellow Fever - -	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Intermittent Fever -	–	6	–	–	5	–	–	–	–	–	–	–	–	–	–	–	–	3	1	1
Small-pox - - -	–	–	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	13	–	–
Scarlatina - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–
Measles - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Inflammation of the Brain - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
Apoplexy - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–
Epilepsy - - -	–	2	–	1	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–
Insanity - - -	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Delirium Tremens -	–	6	–	1	–	–	2	–	–	–	–	–	–	–	–	–	–	3	–	–
Paralysis - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–
Headache, &c. - -	1	13	1	–	–	1	–	1	–	–	–	–	–	–	–	–	1	2	1	–
Inflammation of the Lungs and Pleura -	–	6	–	2	3	–	1	–	–	–	1	1	1	–	–	–	1	11	3	1
Phthisis and Hæmoptysis	–	7	–	–	–	–	–	2	–	–	–	1	1	–	1	–	1	5	–	2
Catarrh - - - -	1	53	5	11	12	9	1	9	–	–	29	2	16	–	–	–	2	94	6	70
Cynanche - - -	1	19	1	1	2	2	1	–	–	–	2	–	–	–	–	–	1	35	2	7
Asthma - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Functional and Organic Disease of the Heart -	–	5	–	1	2	2	–	1	–	–	–	–	1	–	–	–	–	2	–	1
Hæmorrhoids - -	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	4	1	–
Varix - - - -	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–
Inflammation of the Stomach and Bowels -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	[a]4	3	–
Dysentery - - -	1	2	1	–	–	–	–	–	–	–	–	2	–	–	–	–	–	–	–	–
Diarrhœa - - -	4	60	5	5	21	–	–	3	3	–	1	2	–	–	–	–	1	15	8	8
Constipation and Colic -	1	12	–	–	3	6	–	2	–	–	2	–	–	–	–	–	–	4	2	–
Inflammation of the Liver	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–
Jaundice - - -	–	1	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	2	–	–
Inflammation of the Kidneys and Bladder -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	4	–	1
Syphilis - - - -	3	76	2	–	12	–	–	2	4	1	3	2	3	–	5	–	5	138	6	8
Gonorrhœa - - -	2	–	1	1	2	1	–	–	–	1	3	–	1	–	–	–	3	25	4	18
Orchitis - - - -	1	16	–	1	1	1	–	3	1	1	1	–	–	–	–	–	–	20	–	3
Stricture - - - -	–	2	–	–	–	15	1	2	–	–	–	–	–	1	–	–	–	2	1	1
Incontinence of Urine, &c.	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1	1	–
Rheumatism - - -	1	47	–	–	8	6	2	3	1	2	3	1	5	–	–	–	4	29	14	17
Gout - - - -	–	2	–	–	–	–	–	2	–	–	–	–	–	–	–	–	–	3	–	1
Disease of the Bones and Joints - - - -	–	3	–	–	–	–	–	1	–	–	–	–	1	–	–	–	–	–	1	–
Inflammation of the Eyes	1	15	–	1	1	1	–	–	–	–	–	–	–	–	–	–	–	12	1	6
Amaurosis and Cataract	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–
Otitis and Deafness -	–	3	–	–	1	–	–	1	–	–	–	–	–	–	–	–	–	1	–	1
Erysipelas - - -	–	7	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	1	2
Scrofula - - -	–	1	–	–	1	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1
Bubo (*Symp.*) - -	–	–	–	–	3	–	–	5	–	–	1	–	3	–	–	–	2	10	–	8
Phlegmon and Abscess -	2	224	1	1	33	20	1	24	2	3	3	3	19	1	2	–	12	107	11	42
Ulcer - - - - -	2	62	–	–	6	9	–	10	–	–	3	–	9	1	–	–	2	47	1	12
Psora - - - -	–	34	–	2	1	5	–	4	–	–	1	–	3	–	–	–	–	20	1	–
Eruptions, &c. - -	–	4	–	1	2	4	–	7	–	–	–	–	2	–	–	–	–	13	–	12
Dyspepsia and Debility -	–	19	–	4	1	4	–	12	1	–	2	1	1	–	–	–	3	30	8	7
Dropsy - - - -	–	2	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	2	–	–
Worms - - - -	–	1	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–
Wounds and Injuries -	4	160	9	5	29	12	2	13	2	2	12	9	14	1	–	6	9	115	12	111
Burns and Scalds - -	–	9	–	1	2	1	–	1	–	–	–	–	–	–	1	–	1	5	2	2
Hernia - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	1
Sphacelus - - -	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–
Scurvy - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	–	2
Poison - - - -	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL - - -	28	941	26	40	151	102	11	115	16	10	67	24	80	5	9	7	51	808	93	349

[a] Coup de soleil.

- - - - - - - TABLE, No. 6.

- - - - - in each Ship employed in the IRREGULAR Force.

Greyhound.	Griffon.	Harrier.	Herald.	Himalaya.	Himalaya.	Industry.	Industry.	Malacca.	Marine Battalion *en route* to Mexico.	Medea.	Megæra.	Miranda.	Nimble.	Orestes.	Orlando.	Orpheus.	Osborne.	Pantaloon.	Pelican.
-	-	-	6	1	-	-	-	-	1	4	3	-	-	12	3	-	3	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	1	1	-	-	1	5	-	1	3	1	1	-	-	4	1	-	2	1	1
-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	2	-	-	-	3	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
-	*a*1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	1	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	1	-	-	-	-	-	-	-	3	-	1	-	-	-	-	-	1	-	-
1	1	-	-	-	8	-	-	-	1	-	4	1	-	-	3	-	-	1	-
-	2	1	-	-	-	-	-	-	1	-	4	-	-	-	-	1	-	-	-
5	-	10	11	15	24	3	3	11	5	3	30	22	-	40	7	17	3	2	2
1	-	11	1	5	6	-	6	7	1	1	12	-	-	6	3	7	4	1	-
-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	1	1	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	1	-	-	-	-	-	1	-	1	2	-	-	1	-	-	-	-	-
-	1	15	3	2	16	-	-	5	3	2	10	2	-	7	1	-	5	2	1
-	-	9	-	1	5	1	-	-	-	-	-	1	-	4	-	-	-	-	-
-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-
4	3	9	-	6	39	-	4	1	27	5	31	4	-	21	11	10	5	-	5
1	3	-	-	-	7	-	2	-	16	-	26	-	-	11	2	5	-	-	2
1	1	4	2	4	2	-	2	1	1	-	4	4	-	5	3	1	-	6	-
-	-	2	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-	-	-
-	-	-	-	1	-	-	-	-	1	-	-	-	-	3	-	-	-	-	-
-	2	14	12	1	18	3	9	3	3	6	16	3	1	21	3	4	6	3	1
-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
-	1	1	-	-	1	-	-	-	-	-	6	1	-	2	-	-	1	2	-
-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-
-	-	1	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	2	-
-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-
-	-	6	-	1	2	-	-	2	1	1	2	1	-	2	-	1	1	-	-
8	2	79	6	17	42	6	4	20	13	8	20	13	1	53	2	20	8	21	-
2	-	24	4	2	12	-	8	2	2	2	9	9	-	19	6	3	1	7	-
1	-	2	-	-	2	-	-	-	5	-	2	-	-	26	1	9	1	-	-
-	-	-	3	-	3	-	-	1	-	-	9	-	-	3	-	1	-	1	-
6	10	4	2	1	28	9	1	-	-	4	20	-	-	2	-	1	2	-	-
-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
14	8	27	15	27	48	3	13	28	15	5	33	11	-	69	8	15	11	25	1
-	3	1	-	2	5	1	1	-	-	1	6	-	-	-	3	1	-	1	-
-	3	1	2	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	46	233	72	89	277	31	53	85	105	46	259	73	2	317	61	99	57	77	13

continued on p. 222.

b Hæmatemesis.

TABLE, No. 6—Showing the Number of Cases of all Diseases and Injuries, &c.—*continued.*

continued from p. 221.

DISEASE OR INJURY,	Penguin.	Phaeton.	Plover.	Procris.	Rinaldo.	Royal Albert.	Sanspareil.	Satellite.	Spider.	Spiteful.	Spitfire.	Supply.	Trident.	Triton.	Virago.	Vixen.	Wanderer.	Weser.	Wye.	TOTAL.
Continued and Remittent Fever	–	5	1	–	–	2	6	3	–	19	–	4	2	–	–	1	–	–	–	158
Yellow Fever	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Intermittent Fever	–	1	–	–	–	–	2	1	–	5	–	–	3	–	3	2	–	–	–	56
Small-pox	–	–	–	–	–	–	1	–	–	2	–	–	–	–	–	–	–	–	–	19
Scarlatina	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Measles	–	–	–	–	–	–	5	–	–	–	–	–	–	–	–	–	–	–	–	10
Inflammation of the Brain	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
Apoplexy	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
Epilepsy	–	–	–	–	2	–	–	–	–	1	–	2	–	–	2	–	–	–	–	14
Insanity	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	1	1	–	–	5
Delirium Tremens	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	18
Paralysis	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
Headache, &c.	–	1	1	–	1	–	–	–	–	–	–	–	–	–	2	3	–	–	–	35
Inflammation of the Lungs and Pleura	1	3	–	–	–	1	3	1	–	4	–	1	2	–	–	–	–	1	–	68
Phthisis and Hæmoptysis	–	1	–	–	–	–	*a*2	–	–	2	–	1	–	–	1	–	–	–	–	36
Catarrh	2	48	2	–	2	5	6	7	–	16	3	9	12	–	10	4	2	–	2	669
Cynanche	–	14	–	1	–	3	15	–	–	2	–	2	4	–	4	2	–	2	1	196
Asthma	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Functional and Organic Disease of the Heart	–	2	–	–	–	–	1	–	–	1	–	–	–	1	1	–	–	–	–	24
Hæmorrhoids	–	1	–	–	–	–	2	–	–	–	–	–	–	–	–	–	–	–	–	16
Varix	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	3
Inflammation of the Stomach and Bowels	–	–	–	–	–	–	*a*1	–	–	–	–	–	–	–	–	–	–	–	–	8
Dysentery	–	–	1	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	14
Diarrhœa	–	5	2	–	1	–	7	1	1	7	–	7	8	–	5	4	5	2	1	267
Constipation and Colic	–	4	–	1	–	–	6	–	–	–	–	1	1	–	2	2	–	1	1	72
Inflammation of the Liver	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	5
Jaundice	–	–	1	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	8
Inflammation of the Kidneys and Bladder	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	10
Syphilis	–	10	2	2	13	4	46	6	1	3	1	5	9	–	11	2	5	3	1	579
Gonorrhœa	–	13	–	–	2	1	31	2	–	–	–	1	–	–	7	–	–	4	2	200
Orchitis	–	4	2	–	–	–	6	1	–	3	–	–	1	–	–	–	–	–	1	108
Stricture	1	–	–	–	1	–	–	–	–	1	–	–	1	–	–	–	–	1	–	35
Incontinence of Urine, &c.	–	1	–	–	–	–	2	–	–	–	–	–	3	–	1	–	–	–	–	15
Rheumatism	–	21	6	–	2	7	10	2	–	9	–	9	21	–	4	5	–	2	–	370
Gout	–	–	–	–	–	–	1	–	–	–	–	–	1	–	–	–	–	–	–	11
Disease of the Bones and Joints	–	1	–	–	1	1	1	–	–	–	–	–	–	–	1	–	–	1	–	14
Inflammation of the Eyes	–	3	–	–	–	–	1	–	–	–	–	1	1	–	–	1	–	–	–	60
Amaurosis and Cataract	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4
Otitis and Deafness	–	–	–	–	–	–	1	–	–	–	–	1	–	–	1	–	–	–	–	15
Erysipelas	–	1	5	–	–	1	–	–	–	–	–	–	–	–	1	–	–	–	–	23
Scrofula	–	1	–	–	–	–	–	–	–	–	–	–	1	–	3	–	1	–	–	13
Bubo (*Symp.*)	2	5	1	–	–	–	6	–	–	2	–	1	1	–	2	–	–	–	–	72
Phlegmon and Abscess	3	37	10	1	6	4	52	3	–	20	1	5	27	4	21	10	9	4	1	1,072
Ulcer	–	7	–	–	3	3	14	1	–	3	–	3	10	–	9	–	1	1	2	333
Psora	–	15	–	–	–	1	–	22	–	–	–	1	–	–	3	–	1	–	–	163
Eruptions, &c.	–	4	–	–	–	1	8	2	–	4	–	2	–	–	4	–	1	–	–	92
Dyspepsia and Debility	–	7	8	–	1	1	2	–	1	3	–	–	11	–	5	1	–	4	–	227
Dropsy	–	1	–	–	–	–	2	–	–	–	–	–	–	–	1	–	–	–	–	11
Worms	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	4
Wounds and Injuries	2	39	9	–	2	8	44	7	2	27	4	13	38	3	51	6	5	–	2	1,165
Burns and Scalds	–	4	–	–	–	–	2	1	–	1	–	3	2	–	3	2	1	–	–	69
Hernia	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	10
Sphacelus	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Scurvy	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	9
Poison	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
TOTAL	11	259	51	5	38	43	310	39	5	137	9	72	160	8	158	46	32	26	15	6,396

a Tabes mesenterica.

b Hæmatemesis.

TOTAL FORCE.

Total Force.

THE Total Force in 1861, corrected for time, was 62,485. The total number of cases of disease and injury amounted to 91,276, of which 2,391 were invalided, and 940 died, the former being in the ratio of 38·2, and the latter of 15· per 1,000 of mean force. As compared with the preceding year, there is thus a decrease in the ratio of invalidings, while there is only a small fractional increase in the ratio of deaths.

It will be seen by Table 2, that the number of cases of disease per man was, on the Home Station, 1·1; on the Mediterranean Station, 1·6; North America and West Indies, 1·8; South East Coast of America, 1·4; Pacific, 1·5; West Coast of Africa, 1·9; Cape of Good Hope, 2·; East Indies and China, 2·; Australia, 1·3; and in the Irregular Force, 1·7; these give an average of 1·5 for the whole force, which is almost exactly the same as that of the preceding year.

The daily number of sick on board ship and in hospital was least on the Australian Station, and, as usual, greatest on the East India and China Station; in the former it was in the ratio of 40· per 1,000, and in the latter of 86·7. In the Home Station the ratio is 48·1 per 1,000, which is an increase over the preceding year, and attributable, unfortunately, in a large measure to the increasing prevalence of syphilitic disease in our home ports. In the Mediterranean the sick rate continues high, and shows even an increase over that of the preceding year, owing to a continuance of the pulmonary affections, which had become epidemic in some of the ships. There is a reduction on the North American and West India Station, and also on the South East Coast of America, the Pacific, and the West Coast of Africa. On the Cape of Good Hope Station, however, the arduous duties which devolved upon the squadron in the Mozambique Channel, and the consequent exposure to which the men were subjected, had a marked influence on the sick rate, which is increased over that of the preceding year as 76·7 is to 52·5. The increase on the East India and China Station may be referred chiefly to the existence of small-pox in an epidemic form in one of the ships, to the increased prevalence of syphilis in the squadron, consequent upon the larger amount of communication

Total Force.

cation with Hong Kong and Japan, and to affections of the skin and glandular system occurring in vessels on the homeward passage. There is a slight reduction on the Australian Station; but in the Irregular Force the increase is as much as 20 per 1,000, and is attributable to the large number of ships that were fitting out at the home ports, or employed making passages to distant stations.

The total loss by invaliding was in the ratio of 38·2 per 1,000, 33·7 being for diseases of various kinds, and 4·5 for wounds, injuries, &c. Although there is a great reduction in the ratio of invaliding in the East Indies and China, this is in no degree to be referred to any marked improvement in the health-state of that station, but simply to the fact, that a large number of the vessels of the squadron were either on their passage to or under orders for England, and that cases which would otherwise of necessity have been invalided, were retained on board their own ships for conveyance home. The invaliding on the Mediterranean Station, although still somewhat high, shows a reduction, which brings it much nearer to the ratio of previous years. On all the other stations the ratio was under the average of that of the entire force. On the Home Station the total loss by invaliding was in the ratio of 31·2 per 1,000; in the Mediterranean, 45·4; North America and West Indies, 36·2; Brazils, 27·7; Pacific, 36·2; West Coast of Africa, 38·; Cape of Good Hope, 31·3; East Indies and China, 61·6; Australia, 28·4, and in the Irregular Force, 26·5.

In the death-rate there is a fractional increase over the preceding year. On the North American and West India Station there were 172 deaths from disease, of which 141 were from yellow fever alone. The total deaths on that station were 200, being in the ratio of 42·1 per 1,000, only a slight decrease compared with the preceding year. Nothing testifies more surely to the specific character of this frightful scourge than the fearful death-rate which results from it wherever it appears. On the West Coast of Africa the increase in the ratio of deaths is entirely attributable to the larger amount of river service to which the squadron was exposed during the year; and on the Cape of Good Hope Station, where the ratio of deaths was double that of the preceding year, the mortality is referrible to fever, and dysentery, contracted by exposure in the laborious duties which devolved upon the squadron employed in suppressing the slave trade, chiefly at Zanzibar, and in its immediate vicinity. There is a slight decrease in the death-rate on the East India and China Station, while on the Australian Station and

Total Force.

and in the Irregular Force there is only a fractional difference as compared with the preceding year.

The following Table shows the ratio of attacks and deaths per 1,000 from the various classes of disease on the respective stations:—

CLASS OF DISEASE.	HOME.		MEDITERRANEAN.		NORTH AMERICA and WEST INDIES.		BRAZILS.		PACIFIC.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Continued and Remittent Fevers -	14·2	1·	66·6	1·8	86·7	·6	67·	2·7	97·4	2·3
Yellow Fever - - - -	–	–	–	–	65·5	29·7	–	–	–	–
Intermittent Fever - - -	4·2	–	12·7	–	18·7	–	18·8	·9	25 3	–
Eruptive Fevers - - -	6·7	–	6·5	·5	1·9	·2	·9	–	·4	–
Disease of Brain, Nerves, &c. -	14·5	·6	26·5	·6	28·3	–	22·4	2·7	17·3	–
Disease of Respiratory Organs -	204·2	3·4	257·7	2·9	192·7	2·9	149·1	4·5	237·5	1·2
Disease of Heart and Blood Vessels	11·3	·6	14·3	·5	12·8	·8	8·1	–	15·4	·8
Disease of Stomach and Bowels -	44·9	·4	128·9	·7	171·7	·4	108·9	·9	112·5	·8
Disease of Liver, Spleen, &c. -	4·	–	6·7	·2	8·2	–	13·4	·9	7·5	–
Disease of Kidneys, Bladder, and Genital Organs - - -	154·3	–	105·	·1	76·4	·2	76·	–	85·4	–
Disease of Joints, Muscles, Bones, &c. - - - - -	63·4	·1	117·1	·3	97·9	–	76·8	–	129·4	–
Disease of Senses, Eyes, Ears, &c.	13·3	–	15·4	–	21·0	–	12·5	–	19·3	–
Disease of Skin, Glandular System, and Cellular Tissue - -	312·5	·1	490·7	·3	537·6	·6	457·2	–	152·	·4
Diseases not specified - -	38·0	·3	41·7	·2	81·0	–	84·0	–	50·3	–
Wounds, Accidents, &c. - -	184·3	2·8	273·3	2·3	358·7	5·8	300·9	3·6	294·3	2·7

CLASS OF DISEASE.	WEST COAST of AFRICA.		CAPE of GOOD HOPE.		EAST INDIES and CHINA.		AUSTRALIA.		IRREGULAR FORCE.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Continued and Remittent Fevers -	429·3	9·	122·3	3·2	82·2	2·4	20·1	–	42·7	1·1
Yellow Fever - - - -	–	–	–	–	–	–	–	–	–	–
Intermittent Fever - - -	90·7	–	37·8	–	89·6	–	10·6	–	15·	–
Eruptive Fevers - - -	·5	–	1·6	–	24·6	2·2	–	–	8·1	·3
Disease of Brain, Nerves, &c. -	21·5	2·9	37·2	1·6	22·8	1·7	12·8	–	20·8	·5
Disease of Respiratory Organs -	125·4	5·9	228·3	3·6	221·2	3·3	183·0	1·1	260·0	3·0
Disease of Heart and Blood Vessels	16·6	1·	13·3	1·1	14·4	·9	18·0	2·1	11·5	·3
Disease of Stomach and Bowels -	144·9	1·5	270·6	3·7	324·0	8·3	127 0	4·2	96·8	·6
Disease of Liver, Spleen, &c. -	6·3	1·	11·2	·5	13·0	1·2	7·4	1·1	3·4	–
Disease of Kidneys, Bladder, and Genital Organs - - -	42·5	–	83·4	·5	193·4	·2	32·6	–	253·9	–
Disease of Joints, Muscles, Bones, &c. - - - - -	90·8	–	119·1	–	112·4	–	92·0	–	105·9	–
Disease of Senses, Eyes, Ears, &c.	32·1	–	24·5	–	72·3	–	11·6	–	21·2	–
Disease of Skin, Glandular System, and Cellular Tissue - -	469·8	·5	558·4	–	430·8	·3	468·6	–	474·1	–
Diseases not specified - -	87·8	–	95·3	–	75·3	1·4	58·3	–	67·6	–
Wounds, Accidents, &c. - -	314·6	13·2	416·4	4·8	292·7	4·4	279·3	5·2	333·8	4·9

Total Force.

Fevers.—The total number of cases of continued and remittent fevers in the whole force throughout the year was 3,945, of which twenty were invalided, and 108 died. The ratio of cases for the whole force was 63·1, and the ratio of deaths 1·7 per 1,000. It will be seen by the above Table that the largest ratio of cases of fever was on the West Coast of Africa, and that the Cape of Good Hope Station stands next in this respect. The latter station, however, is indebted to the Mozambique Channel almost entirely for this high sick rate. On the West Coast of Africa the ratio of cases was 429·3 per 1,000, and on the Cape Station it was 122·3. The death ratio in the former was 9· per 1,000, and in the latter 3·2. The unusual prevalence of fevers on those stations has already been alluded to, and has been shown to have depended in the one case on the peculiar duties which devolved on the squadron stationed in the Mozambique, while on the West Coast of Africa the squadron was more or less engaged during the whole year in active operations, necessitating a very large amount of river service, in which the men were exposed in the greatest degree to those influences which operate in the production of malarial fevers. When the nature of those operations and the pestilential character of the localities in which they were conducted are taken into consideration, it seems impossible to over-estimate the prophylactic value of quinine, which was almost always administered to the men when exposed to malarial influences, without which agent the mortality would doubtless have been much larger, if indeed the operations could have been carried on at all. On the Pacific Station the ratio of cases of continued and remittent fevers was 97·4, and the death ratio 2·3. This, as regards the ratio of cases, is somewhat under that of the preceding year, but the mortality is nearly four times as great. In 1860 the ratio of cases on that station was 106·6, and the mortality was only ·6. This large increase in the death-rate is almost entirely attributable to an outbreak of enteric fever in two ships. It will be obvious that under such a comprehensive head as continued and remittent fevers, which may include under the former ephemeral, enteric, and typhus fevers, and under the latter the malignant and benign varieties of the malarial class, a low death-rate will not necessarily indicate a more successful method of dealing with those diseases, but simply suggest the probability that the more formidable varieties of these fevers were not present. A dozen cases of enteric fever will give a larger mortality than a hundred cases of ephemeral fever; and the degrees of

Total Force.

of severity of remittent fevers vary from what amounts to little more than a feeling of general malaise, to seizures of such malignancy as to be almost instantaneously fatal. There is a considerable increase both in the ratio of cases and in the death-rate on the Brazil Station, as compared with the former year: the cases were, however, mainly of an ephemeral character, the mortality being attributable to a few cases of enteric fever, which appears to be endemic in the River Plate. Although there is a marked reduction in the ratio of cases on the East India and China Station, the death-rate is somewhat higher than in the preceding year. On the Home Station there is an increase both in the ratio of cases and of deaths; but on the Australian Station there is a very considerable reduction, and there was no mortality from these diseases. In the Irregular Force, while the ratio of cases is nearly double, the death-rate is exactly the same as that which obtained in 1860.

Yellow fever was fortunately confined to one station. On that station, however, there were 311 cases of this fearful disease, 141 of which proved fatal. The circumstances connected with these cases are fully entered upon in the remarks on the station on which they appeared.

The West Coast of Africa and the East India and China Station maintain their pre-eminence in malarial fevers. The ratio of cases of intermittent fevers on the former station was 90·7 per 1,000, and on the latter 89·6. This, as compared with 1860, is an increase of more than double as regards the former station, and a very large reduction in the latter. Both of these stations, in respect of these ratios, as well as the Cape of Good Hope Station, in which the ratio of intermittent fevers is more than three times as great as that of the preceding year, verify the remark that has been frequently made in these returns, that on such stations the health-rate of the squadrons will be largely influenced by the nature of the duties on which they are employed. On the East India and China Station, where the squadron was removed from river service almost entirely, the ratio is reduced in a remarkable degree; while on the other two stations, on which river service was called for in a more than usual manner, the increase was proportionally decided.

Eruptive Fevers.—The number of cases of small-pox, and the ratio of mortality from this disease, were almost the same as in 1860. There was a reduction in the cases of measles,

Total Force.

measles, and a very large increase in the number of cases of scarlatina. Of the twenty-four deaths which occurred from small-pox, nine were on the Mediterranean Station, and thirteen in China.

Brain and Nervous System.—Under this head the ratio of cases was largest on the Cape of Good Hope Station, the ratio of deaths on the West Coast of Africa. A large majority of those on the Cape Station, however, are returned as simple cases of headache. There were, altogether, fifty-three deaths under this head; of which fifteen were from disease of the brain, nineteen from apoplexy, four of which were the immediate effects of drinking, one from epilepsy, two from paralysis, one from insanity, and fifteen from delirium tremens, six of these being officers, and nine men.

Organs of Respiration.—There is a very considerable reduction in the ratio of cases of disease coming under this head. As in the preceding year, the mortality from phthisis was largest on the Home Station, while the invaliding for the same disease was greatest in the Mediterranean. The total mortality from diseases of the respiratory organs was in the ratio of 3·0 per 1,000, being a slight reduction as compared with that of the preceding year. The largest death-ratio was on the West Coast of Africa, the cause of which has been noticed in previous reports. The ratio of deaths was lowest on the Australian Station.

Heart and Blood Vessels.—Under this head there were thirty-nine deaths from organic diseases of the heart, and one from hæmorrhoids. The total number of cases returned throughout the year was 810; of these, 255 were invalided.

Stomach and Bowels.—The ratio of deaths from all forms of disease coming under this head is exactly one-half of what it was in 1860. This is entirely owing to the comparatively small returns of dysentery on the East Indian and China Station. In 1860 there were on that station 615 cases of dysentery, of which 175 were invalided, and 116 died, being in the ratio per 1,000 of cases 72·, of invaliding 20·5, and of deaths 13·6; while in the present year there were 184 cases of dysentery, seventy-three of which were invalided, and thirty-seven died, being in the ratios respectively of cases 31·4, of invaliding 12·4, and of deaths 6·3. The

Total Force.

causes of the comparatively healthy condition of that station, have already been repeatedly alluded to. There is a marked increase in the death-rate from these affections on the Cape of Good Hope Station, attributable to an epidemic of dysentery, which occurred in one ship. There is a reduction in the death-rate on the West Coast of Africa, but there is a very large increase on the Australian Station. This increase, however, was not owing to endemic disease, but to the circumstance of a few cases of inflammation of the stomach and intestines which terminated fatally by perforation.

On the West Coast of Africa there is a reduction in the death-rate from these affections of 1·2 per 1,000. It may be well to note here, with regard to what has been stated of dysenteric-diarrhœa and malarial fevers being dependent upon the same cause, that on the West Coast of Africa Station—

In 1860 there were of continued and periodic fevers - - - - - -		552 cases, of which	6 died.
In 1860 there were	Dysentery - 4 cases Diarrhœa 259 „	263 „ „	2 died.
In 1861 there were of continued and periodic fevers - - - - -		1,066 „ „	15 died.
In 1861 there were	Dysentery - 12 cases Diarrhœa 183 „	195 „ „	3 died.

and of these three, one occurred in a man who had contracted the disease in China; one in a sickly boy, who had suffered from bowel complaint since childhood, and one in a Krooman. In China, in 1861, on the other hand, there were only of these fevers 1,007 cases, of which fourteen died; while of dysentery there were 184 cases, and of diarrhœa 1,500, making altogether 1,684 cases of these affections, of which forty-three died. In China the squadron in 1861 was unusually exempted from the influence of malarial poisons; while on the West Coast of Africa the force was almost constantly employed on river service, and in localities of the most pestilential character. The ratio of deaths per 1,000 from dysentery in China was 6·3, on the West Coast of Africa it was only 1·5. It would appear, therefore, that malaria alone does not play so important a part in the induction of these affections as some have supposed.

Liver, &c.—Of sixteen deaths from inflammatory affections of the liver, seven occurred on the China Station. The diseases in almost all the cases had advanced to suppuration.

Genito-Urinary System.—There is an increase in the ratio of all diseases of a venereal character. The increase is

Total Force. largest in cases of syphilis, the difference being as 80· to 70·6. In gonorrhœa there is an increase of 5·1 per 1,000.

The ratio of attacks of these diseases per 1,000 of force on the respective stations was as follows, in 1860 and 1861:

	SYPHILIS.		GONORRHŒA.	
	1860.	1861.	1860.	1861.
Home - - - - -	76·8	100·4	20·3	29·6
Mediterranean - - -	65·7	64·5	13·9	14·5
North American and West India - - - - -	31·1	35·8	9·8	12·2
Brazils - - - - -	22·4	29·5	10·4	16·1
Pacific - - - - -	52·2	45·7	22·6	20·4
West Coast of Africa - -	18·1	17·1	7·1	8·3
Cape of Good Hope - -	17·2	47·3	4·5	12·8
East Indies and China - -	76·	101·2	15·9	44·5
Australia - - - -	20·2	12·7	14·9	8·4
Irregular Force - - -	120·3	155·2	48·1	53·6

It will thus be seen that, with the exception of the Mediterranean Station (where the reduction is merely fractional), the Pacific, and the Australian Stations, the increase of these diseases on all the stations is very decided. On the Home Station there is evidence that, in the different ports at which the ships lie, the diseases are becoming even more general than they were, and this also accounts for the increase in the Irregular Force, the diseases in that force being almost entirely contracted at the home ports. The increase of venereal disease on the East India and China Station is referrible to the larger amount of communication the ships had with Hong Kong, and the seaports of Japan, where it abounds. It is greatly to be deplored that these diseases should exist in largest amount and severity in the very localities in which we have the means of exerting the greatest degree of control, and it is earnestly to be hoped that the day is not far distant when such effective measures will be taken as shall greatly mitigate, if not entirely remove, an evil, the enormity of which cannot be overstated.

Rheumatism.—In the Statistical Report for 1860 a Table is given showing the ratio of attacks of rheumatism in that year, in juxta-position with the average ratio of the four preceding

Total Force.

preceding years. The following Table shows the ratio of attacks in 1861:—

Home	58·1
Mediterranean	112·8
North America and West Indies	88·2
Brazilian	69·6
Pacific	122·6
West Coast of Africa	83·9
Cape of Good Hope	115·4
East Indies and China	106·8
Australia	86·8
Irregular Force	99·2

It will thus be seen, that although there is a great increase in the ratios on the Mediterranean and Cape of Good Hope Stations, the Pacific maintains its supremacy in these affections. There is a large reduction in the ratio on the Australian Station.

Special Senses.—There is a very large increase in the ratio of cases under this head. This is exclusively owing to the prevalence of ophthalmia in an epidemic form in several of the ships on the East India and China Station. On that station in 1860 the ratio of cases of ophthalmia per 1,000 was 12·1, while in 1861 it was 65·3. The ratio for ophthalmia for the whole force throughout the year 1860 was 11·2: the returns in 1861 give a ratio of 16·5.

Skin, Cellular Tissue, &c.—The mortality from erysipelas during the year was six: nine deaths are reported from abscess, and one from ulcer. There were seven deaths under the head of dyspepsia and debility, eight from dropsy, and three from cancer.

Average Daily Number Sick.—The total number of men daily sick of fevers of a continued or remittent type was about 172; of yellow fever about twelve; of intermittent fever about thirty-five. The daily loss of service from eruptive fever was equal to about thirty-five men, twenty-eight of whom were labouring under small-pox. Nearly one-half of this loss of service from small-pox was on the East India and China Station. The daily loss of service from diseases of the brain and nervous system was identical with that of the preceding year, viz., fifty-seven; from affections of the respiratory organs it was 443, nearly one-half of the loss being from influenza or catarrh. There was a daily loss of service equal to about fifty-seven men from diseases of the circulatory

Total Force.

latory system; and from stomach and bowel affections the loss was equal to 191 men; 120 were suffering from diarrhœa. The daily loss from hepatic and splenic affections was equal to twenty-seven men.

The daily loss of service from diseases of the genito-urinary organs was equal to 685 men, 497 of whom were labouring under syphilis, and eighty under gonorrhœa. This, as has been already stated, is an increase compared with the preceding year. There was a daily loss of service equal to about 308 men from rheumatism, gout, &c., while the loss from affections of the special senses was twenty-seven, a large increase compared with the loss in 1860.

Under the head of diseases of the skin and cellular tissue, there is an increase of loss of service daily as compared with the preceding year, nearly equal to 100 men. This arises chiefly from the greater prevalence of common boils, and of itch and other eruptions. The latter affections are very commonly attendant upon ships fitting out at the home ports, while boils and abscesses are frequent in ships making long voyages either to or from their station. A large number of vessels were on their homeward voyage during the year, and many ships were fitting out for foreign service. These vessels are for the most part included in the Irregular Force. In that force, in 1860, the ratio per 1,000 of cases of phlegmon and abscess was 264·4, of itch 14·2, and of eruptions of various kinds 16·8. In 1861 it was 287·4, 43·7, and 24·7 for these affections respectively.

The following Table shows the ratio per 1,000 of mean force on the different stations of men daily sick from all diseases and injuries, of invalidings, and of deaths:

STATIONS.	Ratio per 1,000 of Men Sick Daily.	Ratio per 1,000 of Invaliding.	Ratio per 1,000 of Deaths.
Home - - - - - -	48·1	31·2	9·6
Mediterranean - - - -	61·8	45·4	10·4
North America and West Indies -	60·4	36·2	42·1
Brazils - - - - -	43·4	27·7	16·1
Pacific - - - - -	58·9	36·2	7·9
West Coast of Africa - - -	62·	38·	34·1
Cape of Good Hope - - -	76·7	31·3	18·1
East Indies and China - -	86·7	61·6	26·1
Australia - - - - -	40·	28·4	13·7
Irregular Force - - - -	77·4	26·5	10·4

The

The whole matter may be thus summed up:

Total Force.

The total force in 1861 was 62,485, and the total number daily sick was 3,710; so that of every 1,000 men of the force fifty-nine were sick daily, either on board ship or in hospital.

The total number of cases of disease and injury throughout the year was 91,276, being in the ratio of 1460·7 to the 1,000, or nearly three entries on the sick list to every two men of the force. Of these 91,276 cases, each case on an average was fourteen days under treatment, and the total number of days' sickness being 1,354,305, gave a mean of about 21 days' sickness to each man of the force.

The total number invalided was 2,391, or 38·2 per 1,000, and the total number who died was 940, or 15· per 1,000, thus showing a decrease in the ratio of invaliding, as compared with 1860, of 4·2, and only a very small fractional increase in the ratio of deaths.

TABLE, No. 1.

SHOWING the Number of CASES of all DISEASES and INJURIES, and the Number INVALIDED and DEAD, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever	3,945	63·1	20	·3	108	1·7
Yellow Fever	311	4·9	1	- -	141	2·2
Intermittent Fever	1,332	21·3	13	·2	1	—
Small-pox	315	5·	- -	- -	24	·3
Measles	19	·3	—	—	—	—
Scarlatina	119	1·9	- -	- -	1	—
Disease of the Brain	11	·1	4	- -	15	·2
Apoplexy	32	·5	1	- -	19	·3
Epilepsy	229	3·6	101	1·6	1	—
Paralysis	60	·9	40	·6	2	—
Insanity	52	·8	39	·6	1	—
Delirium Tremens	231	3·6	1	- -	15	·2
Headache, &c.	703	11·2	18	·2	—	—
Inflammation of the Lungs and Pleura	1,232	19·7	82	1·3	62	·9
Phthisis and Hæmoptysis	427	6·8	435	6·9	133	2·1
Influenza and Catarrh	9,514	152·2	—	—	—	—
Cynanche	2,564	41·	—	—	—	—
Asthma	51	·8	16	·2	—	—
Functional and Organic Disease of the Heart	523	8·3	215	3·4	39	·6
Hæmorrhoids	216	3·4	7	·1	1	—
Varix	71	1·1	33	·5	—	—
Inflammation of the Stomach and Bowels	106	1·6	15	·2	22	·3
Dysentery	428	6·8	95	1·5	55	·8
Diarrhœa	5,821	93·1	21	·3	10	·1
Cholera	12	·1	- -	- -	3	—
Constipation and Colic	1,226	19·6	1	—	—	—
Inflammation of the Liver	195	3·1	52	·8	16	·2
Jaundice	205	3·2	1	—	—	—
Splenitis	10	·1	1	—	—	—

TABLE, No. 1.—Showing the Number of Cases of all Diseases, &c.—*continued.*

DISEASE OR INJURY.	Number of Cases.	Ratio per 1,000 of Mean Force.	Number Invalided.	Ratio per 1,000 of Mean Force.	Number Dead.	Ratio per 1,000 of Mean Force.
Inflammation of the Bladder and Kidneys	82	1·3	24	·3	5	—
Syphilis	5,003	80·	78	1·2	1	—
Gonorrhœa	1,558	24·9	—	—	—	—
Orchitis	1,259	20·1	12	·1	—	—
Stricture	305	4·8	63	1·	—	—
Incontinence of Urine, &c.	116	1·8	23	·3	—	—
Rheumatism	5,492	87·8	210	3·3	3	—
Gout	84	1·3	2	—	—	—
Disease of the Bones and Joints	264	4·2	70	1·1	4	—
Ophthalmia	1,036	16·5	15	·2	—	—
Amaurosis and Cataract	77	1·2	58	·9	—	—
Otitis and Deafness	238	3·8	24	·3	—	—
Erysipelas	215	3·4	6	- -	6	—
Scrofula	102	1·6	35	·5	—	—
Bubo (*Symp.*)	1,024	16·3	—	—	—	—
Phlegmon and Abscess	16,438	263·	36	·5	9	·1
Ulcer	6,020	96·3	97	1·5	1	—
Psora	1,369	21·9	2	—	—	—
Eruptions, &c.	1,117	17·8	13	·2	—	—
Dyspepsia and Debility	3,028	48·4	109	1·7	7	·1
Scurvy	21	·3	1	—	—	—
Dropsy	98	1·5	16	·2	8	·1
Worms	130	2·	1	—	—	—
Cancer	3	- -	1	- -	3	—
Purpura	4	—	—	—	—	—
Wounds and Injuries	15,407	246·5	160	2·5	101	1·6
Burns and Scalds	652	10·4	2	—	—	—
Hernia	160	2·5	121	1·9	—	—
Drowned	- -	- -	- -	- -	104	1·6
Murdered	- -	- -	- -	- -	3	—
Suicide	2	- -	- -	- -	9	·1
Poison	10	·1	- -	- -	3	—
Tetanus	1	- -	- -	- -	1	—
Asphyxia	- -	- -	- -	- -	1	—
Gangrene	1	—	—	—	—	—
Not stated	- -	- -	- -	- -	2	—
TOTAL	91,276	1460·7	2,391	38·2	940	15·

TABLE, No. 2.

SHOWING the MEAN FORCE; the Number of CASES; the Number of Days' SICKNESS; with the Ratios on the different Stations.

STATION.	Mean Force.	Number of Cases of Disease and Injury.	Number of Cases per Man.	Number of Days' Sickness on Board.	Average Number of Men Sick per Diem.	Ratio per 1,000 of Mean Force.	Number dis-charged to Hospital.	Ratio per 1,000 of Mean Force.	Number of Days' Sickness in Hospital.	Average Number of Men Daily in Hospital.	Ratio per 1,000 of Mean Force.	Total Number of Days' Sickness.	Total Average Number of Men Sick per Diem.	Ratio per 1,000 of Mean Force.
Home - - -	22,900	24,525	1·1	237,619	651·1	28·4	2,689	117·4	164,413	450·4	19·7	402,032	1101·5	48·1
Mediterranean -	16,600	25,946	1·6	320,749	878·8	52·9	1,270	76·9	53,713	147·2	8·9	374,462	1026·	61·8
North America and West Indies -	4,750	8,452	1·8	94,309	258·4	54·4	398	83·8	10,466	28·7	6·	104,775	287·1	60·4
South East Coast of America - -	1,120	1,563	1·4	17,730	48·6	43·4	12	10·7	-	-	-	17,730	48·6	43·4
Pacific - - -	2,650	3,966	1·5	50,569	138·5	52·3	138	52·1	6,414	17·5	6·6	56,983	156·1	58·9
West Coast of Africa	2,050	3,839	1·9	39,888	109·3	53·3	211	102·9	6,532	17·9	8·7	46,420	127·2	62·
Cape of Good Hope -	1,880	3,797	2·	41,512	113·7	60·5	190	10·1	11,135	30·5	6·2	52,647	144·2	76·7
East Indies and China	5,860	11,543	2·	157,928	434·1	74·1	505	85·4	26,215	73·6	12·6	184,143	507·7	86·7
Australia - -	945	1,249	1·3	12,435	34·1	36·1	21	22·2	1,348	3·7	3·9	13,783	37·8	40·
Irregular - -	3,730	6,396	1·7	68,854	220·5	59·1	443	118·7	32,486	57·1	15·3	101,340	277·6	74·4
TOTAL - - -	62,485	91,276	1·5	1,041,593	2853·7	45·5	5,877	94·	312,722	856·8	13·5	1,354,305	3710·5	59·

TABLE, No. 3.

SHOWING the Number of MEN INVALIDED and DEAD from DISEASE and INJURY on the different Stations, with the Ratios per 1,000 of Mean Force.

STATION.	Number of Men Invalided for Disease.	Ratio per 1,000 of Mean Force.	Number of Men Invalided for Injuries.	Ratio per 1,000 of Mean Force.	Total Number Invalided.	Ratio per 1,000 of Mean Force.	Number of Deaths from Disease.	Ratio per 1,000 of Mean Force.	Number of Deaths from Injuries.	Ratio per 1,000 of Mean Force.	Total Number of Deaths.	Ratio per 1,000 of Mean Force.
Home - - - - - -	609	26·6	106	4·6	715	31·2	157	6·8	63	2·8	220	9·6
Mediterranean - - -	681	41·	72	4·4	753	45·4	134	8·1	38	2·3	172	10·4
North America and West Indies -	155	32·6	17	3·6	172	36·2	172	36·3	28	5·8	200	42·1
South East Coast of America -	25	22·3	6	5·4	31	27·7	14	12·5	4	3·6	18	16·1
Pacific - - - - -	85	32·	11	4·2	96	36·2	14	5·3	7	2·6	21	7·9
West Coast of Africa - -	66	32·1	12	5·9	78	38·	43	21·	27	13·1	70	34·1
Cape of Good Hope - - -	50	26·5	9	4·8	59	31·3	25	13·3	9	4·8	34	18·1
East Indies and China - -	336	57·3	25	4·3	361	61·6	128	21·8	25	4·3	153	26·1
Australia - - - -	17	17·8	10	10·6	27	28·4	8	8·5	5	5·2	13	13·7
Irregular - - - -	84	22·5	15	4·	99	26·5	21	5·6	18	4·8	39	10·4
TOTAL - - -	2,108	33·7	283	4·5	2,391	38·2	716	11·5	224	3·5	940	15·

TABLE, No. 4.

SHOWING the Number of DAYS' SICKNESS from each DISEASE and from INJURIES, the Average Number of Men Sick Daily, with the Ratio per 1,000 of Mean Force.

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Continued and Remittent Fever -	47,295	15,452	62,747	171·9	2·7
Yellow Fever - - - -	3,575	744	4,319	11·8	·1
Intermittent Fever - - -	11,411	1,062	12,473	34·7	·5
Small-pox - - - - -	6,425	3,909	10,334	28·3	·4
Measles - - - - -	212	271	483	1·3	—
Scarlatina - - - - -	362	1,777	2,139	5·8	—
Disease of the Brain - - -	133	631	764	2·4	—
Apoplexy - - - - -	138	149	287	·8	—
Epilepsy - - - - -	2,587	1,343	3,930	10·7	—
Paralysis - - - - -	1,279	3,746	5,025	13·8	·2
Insanity - - - - -	922	1,137	2,059	5·6	—
Delirium Tremens - - -	1,730	1,372	3,102	8·6	—
Headache, &c. - - - -	4,731	797	5,528	15·2	·2
Inflammation of the Lungs and Pleura - - - - -	20,370	18,608	38,978	106·8	1·7
Phthisis and Hæmoptysis - -	10,057	17,949	28,006	76·7	1·6
Influenza and Catarrh - - -	69,249	5,389	74,638	204·5	3·2
Cynanche - - - - -	17,745	1,554	19,299	52·8	·8
Asthma - - - - -	450	341	791	2·2	—
Functional and Organic Disease of the Heart - - - -	8,157	8,614	16,771	46·	·7
Hæmorrhoids - - - -	2,512	355	2,867	7·9	—
Varix - - - - -	1,121	230	1,351	3·7	—
Inflammation of the Stomach and Bowels - - - -	1,573	1,369	2,942	8·1	—
Dysentery - - - - -	10,029	7,230	17,259	47·2	·7
Diarrhœa - - - - -	41,668	2,287	43,955	120·4	1·9
Cholera - - - - -	69	- -	69	—	—
Constipation and Colic - - -	5,661	220	5,881	16·1	·2
Inflammation of the Liver - -	3,457	2,484	5,941	16·3	·2
Jaundice - - - - -	2,854	600	3,454	9·4	—
Splenitis - - - - -	345	112	457	1·3	—

Table, No. 4.—Showing the Number of Days' Sickness from each Disease, &c.—*continued.*

DISEASE OR INJURY.	Number of Days' Sickness on Board.	Number of Days' Sickness in Hospital.	Total Number of Days' Sickness.	Average Number of Men Sick Daily.	Ratio per 1,000 of Mean Force.
Inflammation of the Bladder and Kidneys	1,170	1,427	2,597	7·	—
Syphilis	103,181	78,242	181,423	497·	7·9
Gonorrhœa	25,655	3,790	29,445	80·7	1·3
Orchitis	20,052	4,038	24,090	66·2	1·5
Stricture	5,758	4,606	10,364	28·4	·4
Incontinence of Urine	1,350	908	2,258	6·2	—
Rheumatism	69,742	32,334	102,076	279·6	4·4
Gout	870	139	1,009	2·8	—
Disease of the Bones and Joints	4,372	5,166	9,538	26·2	·4
Ophthalmia	10,156	2,173	12,329	13·8	·2
Amaurosis and Cataract	1,034	774	1,808	4·9	—
Otitis and Deafness	2,405	714	3,119	8·6	—
Erysipelas	3,336	1,602	4,938	13·6	·2
Scrofula	2,685	1,807	4,492	12·3	—
Bubo (*Symp*).	22,563	3,154	25,717	70·4	1·1
Phlegmon and Abscess	145,559	11,072	156,631	429·1	6·8
Ulcer	115,186	24,123	139,309	381·6	6·1
Psora	11,019	336	11,355	31·1	·4
Eruptions, &c.	15,380	4,342	19,722	54·	·8
Dyspepsia and Debility	22,409	7,380	29,789	81·6	1·3
Scurvy	334	195	529	1·5	—
Dropsy	1,449	2,034	3,483	9·6	—
Worms	1,064	390	1,454	3·9	—
Cancer	33	291	324	·9	—
Purpura	17	126	143	·4	—
Wounds and Injuries	168,653	20,944	189,597	519·4	8·1
Burns and Scalds	7,890	489	8,379	23·	·3
Hernia	2,096	304	2,400	6·6	—
Poison	28	90	118	·3	—
Fish Poison	2	- -	2	—	—
Gangrene	28	- -	28	—	—
Total	1,041,593	312,722	1,354,305	3710·5	59·

TABLE, No. 5.

SHOWING the Number INVALIDED on the several STATIONS.

CAUSE of INVALIDING.	Home.	Mediterranean.	North America and West Indies.	South East Coast of America.	Pacific.	West Coast of Africa.	Cape of Good Hope.	East Indies and China.	Australia.	Irregular.	TOTAL.
Continued and Remittent Fever	2	15	–	–	–	2	–	1	–	–	20
Yellow Fever	–	–	1	–	–	–	–	–	–	–	1
Intermittent Fever	–	4	–	–	4	2	–	3	–	–	13
Disease of the Brain	–	–	–	–	–	–	–	4	–	–	4
Apoplexy	1	–	–	–	–	–	–	–	–	–	1
Epilepsy	44	18	11	1	7	2	8	7	–	3	101
Paralysis	14	10	9	–	1	–	2	1	1	2	40
Delirium Tremens	–	1	–	–	–	–	–	–	–	–	1
Insanity	10	15	2	1	2	–	3	5	–	1	39
Headache, &c.	9	4	–	1	–	2	2	–	–	–	18
Inflammation of the Lungs and Pleura	30	25	5	1	4	1	3	12	–	1	82
Phthisis	118	196	23	4	19	5	6	34	3	27	435
Asthma	8	2	3	–	–	1	–	1	–	1	16
Functional and Organic Disease of the Heart	78	81	14	–	10	4	7	13	3	5	215
Hæmorrhoids	–	4	1	–	1	–	–	1	–	–	7
Varix	11	13	1	–	1	1	–	4	1	1	33
Disease of the Stomach and Bowels	2	1	7	–	1	2	–	1	1	–	15
Dysentery	5	9	–	2	1	3	–	73	–	2	95
Diarrhœa	3	2	–	–	2	1	–	12	1	–	21
Colic	–	–	–	–	–	1	–	–	–	–	1
Disease of the Liver	9	6	6	2	2	–	3	23	–	1	52
Jaundice	–	–	–	–	–	1	–	–	–	–	1
Splenitis	–	1	–	–	–	–	–	–	–	–	1
Disease of the Bladder and Kidneys	8	6	1	2	3	1	–	2	–	1	24
Syphilis	17	20	11	–	5	1	1	21	–	2	78
Stricture	12	20	4	2	5	4	–	14	–	2	63
Orchitis	1	8	–	1	–	–	–	1	–	1	12
Incontinence of Urine	12	6	–	–	–	–	2	1	–	2	23
Rheumatism	55	80	12	4	7	9	5	28	2	8	210
Gout	1	1	–	–	–	–	–	–	–	–	2
Disease of the Bones and Joints	25	20	15	–	2	–	–	6	–	2	70
Ophthalmia, &c.	5	2	1	–	1	3	–	2	–	1	15
Cataract	18	18	7	–	–	4	1	6	2	2	58
Otitis	9	5	1	–	–	1	1	5	1	1	24
Erysipelas	3	2	–	–	–	–	–	–	–	1	6
Abscess	10	10	3	1	1	2	–	8	–	1	36
Ulcer	28	32	4	1	–	–	–	25	1	6	97
Scrofula	18	8	2	–	1	–	1	2	–	3	35
Psora	–	–	1	–	1	–	–	–	–	–	2
Eruptions	1	4	2	–	1	1	–	3	–	1	13
Dyspepsia and Debility	39	27	7	2	3	10	4	14	–	3	109
Dropsy	2	5	1	–	–	2	1	2	1	2	16
Scurvy	–	–	–	–	–	–	–	–	–	1	1
Worms	–	–	–	–	–	–	–	1	–	–	1
Cancer	1	–	–	–	–	–	–	–	–	–	1
Wounds and Injuries	56	38	9	4	6	8	6	18	9	6	160
Burns and Scalds	–	1	–	–	–	–	–	1	–	–	2
Hernia	50	33	8	2	5	4	3	6	1	9	121
TOTAL	715	753	172	31	96	78	59	361	27	99	2,391

TABLE, No. 6.

SHOWING the Number of DEATHS on the several STATIONS.

CAUSE of DEATH.	Home.	Mediterranean.	North America and West Indies.	South East Coast of America.	Pacific.	West Coast of Africa.	Cape of Good Hope.	East Indies and China.	Australia.	Irregular.	TOTAL.	Ratio per Cent. of Deaths from Disease.	Ratio per Cent. of Deaths from Injury.	Ratio per Cent. of Deaths from all Causes.
Continued and Remittent Fever - -	24	30	3	3	6	18	6	14	–	4	108	15·	–	11·4
Yellow Fever - -	–	–	141	–	–	–	–	–	–	–	141	19·6	–	14·9
Intermittent Fever -	–	–	–	1	–	–	–	–	–	–	1	·1	–	·1
Small-pox - - -	1	9	–	–	–	–	–	13	–	1	24	3·3	–	2·5
Scarlatina - - -	–	–	1	–	–	–	–	–	–	–	1	·1	–	·1
Insanity - - -	1	–	–	–	–	–	–	–	–	–	1	·1	–	·1
Disease of the Brain -	4	3	3	1	–	–	–	4	–	–	15	2·	–	1·5
Apoplexy - - -	6	4	–	1	–	–	2	4	–	2	19	2·6	–	2·
Epilepsy - - -	1	–	–	–	–	–	–	–	–	–	1	·1	–	·1
Paralysis - - -	1	–	–	–	–	–	1	–	–	–	2	·2	–	·2
Delirium Tremens -	3	3	–	1	–	6	–	2	–	–	15	2·	–	1·5
Inflammation of the Lungs and Pleura -	28	11	4	1	2	4	1	4	–	7	62	8·6	–	6·6
Phthisis - - -	51	36	10	4	1	7	4	15	1	4	133	18·5	–	14·1
Disease of the Heart -	13	9	3	–	2	2	2	5	2	1	39	5·4	–	4·1
Hæmorrhoids - -	–	–	1	–	–	–	–	–	–	–	1	·1	–	·1
Inflammation of the Bowels - - -	6	5	–	1	1	–	1	4	3	1	22	3·	–	2·3
Dysentery - - -	–	7	1	–	–	3	6	37	1	–	55	6·8	–	5·3
Diarrhœa - - -	2	–	1	–	–	–	–	6	–	1	10	2·2	–	1·7
Cholera - - -	–	–	–	–	1	–	–	2	–	–	3	·4	–	·3
Disease of the Liver, &c.	1	3	–	1	–	2	1	7	1	–	16	2·2	–	1·8
Inflammation of the Bladder and Kidneys	1	2	1	–	–	–	1	–	–	–	5	·6	–	·5
Syphilis - - -	–	–	–	–	–	–	–	1	–	–	1	·1	–	·1
Rheumatism - -	2	1	–	–	–	–	–	–	–	–	3	·4	–	·3
Disease of the Hip, &c.	1	3	–	–	–	–	–	–	–	–	4	·5	–	·4
Erysipelas - - -	2	2	1	–	1	–	–	–	–	–	6	·8	–	·6
Abscess - - -	1	4	1	–	–	1	–	2	–	–	9	·1	–	·9
Ulcer - - -	–	–	1	–	–	–	–	–	–	–	1	·1	–	·1
Dyspepsia and Debility -	1	1	–	–	–	–	–	5	–	–	7	·9	–	·7
Dropsy - - -	7	–	–	–	–	–	–	1	–	–	8	1·1	–	·8
Cancer - - -	–	1	–	–	–	–	–	2	–	–	3	·4	–	·3
Wounds and Injuries -	25	22	4	3	3	17	5	12	3	7	101	–	45·	10·7
Drowned - - -	31	14	22	1	2	9	3	10	2	10	104	–	46·4	11·
Suicide - - -	6	–	1	–	–	1	–	1	–	–	9	–	4·	·1
Murdered - - -	1	–	–	–	2	–	–	–	–	–	3	–	1·3	·3
Poison - - -	–	1	1	–	–	–	–	1	–	–	3	–	1·3	·3
Tetanus - - -	–	–	–	–	–	–	–	1	–	–	1	–	·4	·1
Asphyxia - - -	–	–	–	–	–	–	–	–	–	1	1	–	·4	·1
Not stated - -	–	1	–	–	–	–	1	–	–	–	2	–	·8	·2
TOTAL - - -	220	172	200	18	21	70	34	153	13	39	940	100·	100·	100·

INDEX

TO SHIPS AND STATIONS,

WITH

LIST OF MEDICAL OFFICERS.

1861.

N.B.—Where the names of two or more Surgeons appear to one Ship, it is to be understood that these officers were serving in the vessel during different periods of the year; or, in some instances, that a Surgeon was borne in lieu of an Assistant Surgeon.

SHIPS.	STATIONS.	RANK.	NAMES OF MEDICAL OFFICERS.
Aboukir	Home	Surgeons	A. Murray; L. J. Monteith.
		Assistant Surgeons	G. Goodman, R. E. Fisher, G. W. Locke, G. Jackson, W. P. Clapp.
Acorn	East Indies	Surgeon	W. E. O'Brien.
		Assistant Surgeons	R. Grieve, M.D.; G. W. J. Sutherland.
Actæon	East Indies	Surgeon	A. Adams.
Adventure	East Indies	Surgeon	D. Carter.
Agamemnon	Mediterranean	Surgeon	A. Graham, M.D.
		Assistant Surgeons	T. H. Taylor; G. M. Egles; T. A. O'Flaherty, M.D.
Ajax	Home	Surgeons	J. G. Buchanan; H. Piers.
		Assistant Surgeons	F. H. Rose; P. M. Roe.
Alacrity	Mediterranean	Surgeons	P. W. Govett; O. J. Llewellyn (actg.)
Alecto	West Coast of Africa	Assistant Surgeon	R. Evans.
Alert	Pacific	Surgeon	F. L. Leonard.
Algerine	East Indies	Assistant Surgeon	G. Mair.
Algiers	Mediterranean	Surgeon	J. S. Davidson.
		Assistant Surgeons	G. A. Campbell; S. H. Knaggs.
Amphion	Mediterranean	Surgeons	T. R. Pickthorn; G. Gordon.
		Assistant Surgeon	B. Gregory.
Antelope	Irregular; West Coast of Africa.	Assistant Surgeon	R. E. Fisher.
Archer	West Coast of Africa	Surgeon	W. B. Fegen.
		Assistant Surgeon	S. Sweetnam.
Ardent	Brazils	Surgeon	G. B. Moore, M.D.

SHIPS.	STATIONS.	RANK.	NAMES OF MEDICAL OFFICERS.
Argus	Mediterranean	Surgeon	J. Bernard (b)
		Assistant Surgeon	F. F. Flynn, M.B.
Ariadne	Irregular	Surgeon	J. C. Ingles.
		Assistant Surgeon	G. W. L. Harrison.
Ariel	Cape of Good Hope	Surgeon	J. Sproule.
		Assistant Surgeon	J. T. B. Torrance, M D.
Arrogant	West Coast of Africa	Surgeon	H. Gimlett, M.D.
		Assistant Surgeons	R. F. Bridgford; T. Kipling.
Asia	Home	Surgeons	E. Davies, M.D.; J. C. Sabben.
		Assistant Surgeons	J. Jefferson, M.D.; W. F. C. Bartlett.
Assurance	Mediterranean	Surgeon	W. Ross, (b.) M.D.
Atholl	Home	Surgeon	M. Walling, M.D.
Aurora	Irregular	Assistant Surgeon	J. Thomson.
Bacchante	Pacific	Surgeon	A. Brown, M.D.
		Assistant Surgeons	A. M‘Bride, M.D.; N. O. D. Parks; W. Redmond.
Banshee	Mediterranean	Surgeon	R. Picken, M.D.
Barracouta	West Indies	Surgeons	G. V. M‘Donagh, M.D.; C. G. Wolfenden; J. Mac E. Wallace.
		Assistant Surgeon	S. Bamfield.
Beagle	East Indies	Assistant Surgeon	T. Coghlan, M.D.
Black Prince	Irregular	Assistant Surgeon	J. Jefferson, M.D.
Blenheim	Home	Surgeons	R. W. Clarke; H. H. Smith, M.D.
		Assistant Surgeon	R. Purves.
Bloodhound	West Coast of Africa	Assistant Surgeon	W. J. Eames.
Brisk	Cape of Good Hope	Surgeon	T. J. Haran.
		Assistant Surgeon	B. R. Murphy.
Britannia	Home	Surgeons	R. D. Mason; W. H. Cameron; W. Mac K. Saunders, M.D.
		Assistant Surgeon	W. R. Bennett, M.D.
Brune	West Coast of Africa	Assistant Surgeon	T. W. Hughes.
Buffalo	West Coast of Africa	Assistant Surgeon	R. C. M‘Clement.
Bulldog	Home; West Indies	Surgeon	J. D. Cronin, M.D.
		Assistant Surgeon	D. Mac N. Johnston.
Buzzard	Brazils	Surgeon	J. Jolliffe.
		Assistant Surgeon	R. Purves.
Cadmus	West Indies	Surgeons	A. W. W. Babington; W. H. Adam.
		Assistant Surgeon	S. Grose.
Cæsar	Mediterranean	Surgeon	J. Caldwell.
		Assistant Surgeons	E. Loney; C. Strickland; J. Thomson; M. Magill, M.D.

SHIPS.	STATIONS.	RANK.	NAMES OF MEDICAL OFFICERS.
Calypso	Pacific	Surgeons	W. H. Sloggett; J. Coulter, M.D.
		Assistant Surgeons	L. Lucas; R. H. T. Gilbert.
Cambrian	East Indies	Surgeon	J. King.
		Assistant Surgeon	T. Colahan.
Cambridge	Home	Surgeons	J. P. Burke, M.D.; T. Seccombe.
		Assistant Surgeons	J. R. Anderson; W. H. Clarke; H. F. Nathan.
Cameleon	Irregular	Surgeon	A. Fisher, M.D.
		Assistant Surgeon	E. Fenn.
Castor	Home	Surgeon	W. R. Dalton.
Centaur	East Indies	Surgeons	R. Mungle; H. Arnot, M.D.
		Assistant Surgeon	J. M'Innes, M.D.
Centurion	Home	Surgeon	W. Smith, M.D.
		Assistant Surgeons	P. Comrie; J. B. Nicoll.
Challenger	Irregular	Surgeon	W. N. Brake.
	West Indies	Assistant Surgeon	W. J. Thomason.
Chanticleer	Irregular	Surgeon	M. P. S. Ward.
		Assistant Surgeon	R. W. Brigstocke.
Charybdis	Irregular	Surgeon	C. K. Ord, M.D.
	East Indies	Assistant Surgeon	H. Rickard.
Chesapeake	East Indies	Surgeon	W. Dickson (b.) M.D.
		Assistant Surgeon	J. E. Fawcett.
Clio	Pacific	Surgeon	F. W. Blake, M.D.
		Assistant Surgeon	H. A. Close.
Cockatrice	Irregular Mediterranean	Assistant Surgeons	B. Browning; M. O. Hurlstone.
Colossus	Home	Surgeon	J. A. Miller.
		Assistant Surgeons	E. P. Forrest; C. J. Devonshire, M.B.
Conqueror	Home	Surgeon	L. C. Urquhart, M.D.
		Assistant Surgeons	C. J. Watson; J. F. Kynsey; J. Middleton, M.D.; C. Devonshire, M.B.; E. P. Forrest.
Cordelia	Australia	Surgeon	D. G. Pendrith.
		Assistant Surgeon	S. J. Burke.
Cornwallis	Home	Surgeons	C. T. S. Kevern; T. Somerville.
		Assistant Surgeon	A. B. Johnson.
Cossack	Home Cape of Good Hope	Surgeons	R. C. Russell; W. P. J. Purcell (acting).
		Assistant Surgeons	W. J. Asslin; E. Dubuc, M.D.

SHIPS.	STATIONS.	RANK.	NAMES OF MEDICAL OFFICERS.
Cressy	Mediterranean	Surgeon Assistant Surgeons	T. H. Keown. F. H. Moore; G. Duncan.
Crocodile	Home	Surgeons	V. C. Clarke, M.D.; J. T. U. Bremner, M.D.
Cruiser	East Indies	Surgeon Assistant Surgeon	J. G. T. Forbes. D. O'Connor.
Cumberland	Home	Surgeons Assistant Surgeons	S. Donelly; W. Loney, M.D. C. J. Symons; A. Cooper.
Curaçoa	Brazils	Surgeon Assistant Surgeons	F. Negus. M. M'Grath; J. Hunter.
Curlew	Brazils	Surgeon	R. Creighton.
Cyclops	East Indies	Surgeon Assistant Surgeon	J. Gunn. J. T. B. Torrance, M.D.
Cygnet	Irregular; West Indies	Assistant Surgeon	G. Duncan.
Dasher	Home	Assistant Surgeon	G. Molloy.
Dauntless	Home	Surgeon Assistant Surgeon	G. D. Maclaren. J. W. Dobbin.
Dee	Home	Assistant Surgeon	P. W. Rolston.
Defence	Irregular	Surgeon Assistant Surgeon	C. F. A. Courtney. J. Paterson, M. D.
Defiance	Irregular	Assistant Surgeon	J. Thomson.
Desperate	Irregular; West Indies	Surgeon Assistant Surgeon	D. Sanders. W. Johnston, M. D.
Devastation	Irregular	Surgeon Assistant Surgeon	C. Sproull. C. Atchison.
Diadem	Home	Surgeons Assistant Surgeons	J. Ternan, M. D. B. G. De Landre; J. M. Bateson.
Donegal	Home	Surgeons Assistant Surgeons	W. D. Kerr, M.D.; J. King. P. Mansfield, M.D.; J. Brown; E. F. Miles; F. Piercy.
Doris	Mediterranean	Surgeon Assistant Surgeons	P. Digan, M.D. J. Coogan; T. W. Orwin.
Doterel	Irregular	Assistant Surgeon	N. T. Connolly.
Dragon	Irregular	Surgeon Assistant Surgeon	A. Fisher, M. D. E. Fenn.
Driver	Irregular	Surgeon Assistant Surgeon	J. M. E. Wallace. W. Graham.
Eagle	Home	Surgeon	H. Richardson, M.D.
Edgar	Home	Surgeons Assistant Surgeons	T. Somerville, M.D.; W. Wood, M.D.; W. H. Sloggett. J. Halpin; D. Hilston, M.D.; P. Comrie.

SHIPS.	STATIONS.	RANK.	NAMES OF MEDICAL OFFICERS.
Edinburgh	Home	Surgeon	J. Bower, M. D.
		Assistant Surgeons	J. C. Messer, M. D.; F. A. Brice, M. D.
Emerald	Irregular	Surgeons	W. Loney, M. D.; J. Cockin.
		Assistant Surgeons	D. M'Carthy; R. Hague, M.D.; J. A. Allan, M.D.
Encounter	East Indies	Surgeon	A. Irwin.
		Assistant Surgeons	F. J. Withers; A. Hogg.
Esk	East Indies	Surgeon	R. Irvine, M. D.
		Assistant Surgeon	F. Piercy.
Espoir	West Coast of Africa	Assistant Surgeon	C. H. Slaughter.
Excellent	Home	Surgeons	W. W. Baynes; J. Thomson (c.), M. D.
		Assistant Surgeons	C. G. Wolfenden; W. G. Hill; W. Yarde, M. D.
Exmouth	Mediterranean	Surgeon	H. Trevan, M. D.
		Assistant Surgeons	A. Minnoch; T. Warden, M. D.
Falcon	West Coast of Africa	Surgeon	W. B. C. Christy, M. D.
		Assistant Surgeon	W. Roche (b).
Fawn	Australia	Surgeon	W. Fasken, M. D.
		Assistant Surgeon	J. Clarkson.
Ferret	Home	Assistant Surgeon	A Collins, M. B.
Firebrand	West Indies; Irregular	Surgeon	J. Long, M. D.
		Assistant Surgeons	T. Craig; W. D. Longfield.
Firefly	Mediterranean	Surgeon	J. Flanagan.
Fisgard	Home	Surgeons	H. Liddell; M. T. West.
		Assistant Surgeon	R. Humphrys.
Flying Fish	Home	Surgeons	T. B. Purchas, M. D. J. N. Dick.
Formidable	Home	Surgeons	J. H. Carruthers; W. N. Brake.
		Assistant Surgeon	R. H. Carroll.
Forte	West Coast of Africa Brazils	Surgeon	J. J. Crawford, M. D.
		Assistant Surgeons	M. W. Cowan, M. D.; R. J. M'Morris.
Foxhound	Mediterranean	Surgeon	J. Johnstone.
Furious	East Indies	Surgeon	C. Sproull.
		Assistant Surgeon	H. G. Ruby.
Fury	East Indies	Surgeon	R. C. Scott.
Ganges	Irregular	Surgeon	G. Yeo, M. D.
		Assistant Surgeons	W. Roche (a); A. Mullan.
Gannet	Mediterranean	Surgeon	J. Murphy.
		Assistant Surgeon	T. S. Burnett.
Geyser	Home	Surgeon	C. A. Ducket, M. D.
		Assistant Surgeon	T. Cann, M. D.

SHIPS.	STATIONS.	RANK.	NAMES OF MEDICAL OFFICERS.
Gladiator	West Indies	Surgeon	M. Hamilton, M.D.
		Assistant Surgeon	M. J. Rahilly, M.D.
Gorgon	Cape of Good Hope	Surgeon	D. Ramsay, M.D.
		Assistant Surgeon	C. P. Mulvany.
Greyhound	Mediterranean	Surgeon	M. Hamilton, M.D.
		Assistant Surgeon	M. J. Rahilly, M.D.
Griffon	West Coast of Africa; Irregular	Assistant Surgeon	F. F. Flynn, M.B.
Gunboats	East Indies.		
Hannibal	Mediterranean	Surgeon	S. W. Webb.
		Assistant Surgeons	R. P. Hiffernan; R. Walker, M.D.; T. A. Roe, M.D.
Harrier	Irregular; Australia	Surgeon	W. G. J. Ayre.
		Assistant Surgeon	W. A. Turner.
Hastings	Home	Surgeon	J. Nihill, M. D.
Hawke	Home	Surgeon	J. G. Risk.
		Assistant Surgeon	B. Crabbe.
Hecaté	Pacific	Surgeon	C. B. Wood.
		Assistant Surgeon	S. Campbell, M.D.
Herald	Irregular	Surgeon	F. M. Rayner.
		Assistant Surgeon	G. B. Beale, M.D.
Hero	Home	Surgeons	F. Harvey; J. Vaughan.
		Assistant Surgeons	M. Coates; A. Stevenson; J. P. Courtenay; J. A Skene.
Hesper	East Indies	Assistant Surgeons	E. T. Mortimer; F. C. Magrath.
Hibernia	Mediterranean	Surgeons	J. A. Mould; C. D. M‘Carthy (acting); T. R. Pickthorn.
		Assistant Surgeons	H. H. J. Sterling; B. Browning.
Highflyer	East Indies	Surgeon	C. F. A. Courtney.
		Assistant Surgeon	F. A. Brice, M.D.
Himalaya	Irregular	Surgeons	J. T. U. Bremner, M.D.; W. T. Wilson.
		Assistant Surgeons	E. M‘Carthy; H. B. Wynter.
Hogue	Home	Surgeon	J. Walsh, M.D.
		Assistant Surgeons	J. M. Tronson, M.D.; A. M‘Kenna, M.D.
Hornet	East Indies	Surgeons	D. Finucane, M.D.; W. H. Baxter.
		Assistant Surgeon	G. H. Maunsell.

SHIPS.	STATIONS.	RANK.	NAMES OF MEDICAL OFFICERS.
Hydra	West Indies	Surgeon Assistant Surgeon	J. Lilburne. J. C. Grigg.
Icarus	Home	Surgeon Assistant Surgeon	J. D. Macdonald. J. Donovan.
Illustrious	Home	Surgeon Assistant Surgeons	J. C. Sabben. C. B. Lamb; J. Hunter.
Imaum	West Indies	Surgeons Assistant Surgeon	T. Seccombe; C. D. Shephard. W. Lockhart, M.D.
Immortalité	Home; West Indies	Surgeon Assistant Surgeons	W. L. Gordon, M.D. W. Carmichael, M.D.; G. Monteath, M.D.
Imperieuse	East Indies	Surgeon Assistant Surgeons	J. Henderson, M.D. J. Ligertwood, M.D.; E. B. Broster.
Implacable	Home	Surgeon	J. J. Martin.
Impregnable	Home	Surgeon Assistant Surgeons	R. T. C. Scott. J. Noble; J. E. Dyas; A. Mullan; W. Connolly, M.D.
Indus	Home	Surgeon Assistant Surgeons	C. R. Brien, M.D. C. Morton; D. Duncan, M.D.
Industry	Irregular	Assistant Surgeons	P. Keelan; W. H. Bell.
Inflexible	East Indies	Surgeon	M. M. Magrath (acting).
Insolent	East Indies	Assistant Surgeon	G. Clark.
Intrepid	Mediterranean	Surgeons	J. Coogan (acting); J. Sloss, M.D.; T. Fulton, M.D. (acting); O. J. Llewellyn.
Iris	Australia	Surgeon Assistant Surgeon	W. Lawrence. W. Connolly, M.D.
Jackal	Home	Assistant Surgeon	R. Atkinson.
James Watt	Mediterranean	Surgeon Assistant Surgeons	W. T. Rogers. W. S. Fisher, M.B.; D. A. Moxey, M.D.
Jason	Home; West Indies	Surgeon Assistant Surgeon	J. Forbes (D). C. C. Mitchinson.
Jasper	West Indies	Assistant Surgeon	C. F. Wise.
Landrail	West Indies	Assistant Surgeons	J. S. Dobbyn; W. J. Thomason.
Lapwing	Mediterranean	Surgeon	R. W. Beaumont.
Leopard	Brazils	Surgeon Assistant Surgeon	J. Wade (b). G. W. Locke.
Leven	East Indies	Assistant Surgeon	G. V. Hart.
Liffey	Mediterranean	Surgeons Assistant Surgeons	P. W. Govett; G. Moore, M.D. C. D. M'Carthy; J. Allen.

SHIPS.	STATION.	RANK.	NAMES OF MEDICAL OFFICERS.
Lizard	Home	Assistant Surgeon	A. J. Ireland, M.D.
London	Mediterranean	Surgeons	G. A. Nicolls, M.D; W. J. Hamilton, M.D.; T. Stratton, M.D.; J. Sloss, M.D.
		Assistant Surgeons	T. Fulton, M.D.; G. E. Farr.
Lyra	Cape of Good Hope	Surgeon	H. M. Speer.
Madagascar	Brazils	Surgeon	W. Macleod, M.D.
		Assistant Surgeons	J. A. Skene; G. Bolster.
Mæander	West Coast of Africa	Surgeon	W. H. Clarke.
		Assistant Surgeons	J. Farrelly; F. H. Rose.
Magicienne	East Indies	Surgeon	W. G. Goldin, M.D.
		Assistant Surgeon	G. E. Farr.
Majestic	Home	Surgeons	R. Beith, M.D.; J. Stewart (b), M.D.
		Assistant Surgeon	W. J. Bluett.
Malacca	Irregular	Surgeon	W. Telfer.
		Assistant Surgeon	J. T. B. Torrance, M.D.
Marlborough	Mediterranean	Surgeons	H. J. Domville; A. E. Mackay, M.D.
		Assistant Surgeons	R. R. Siccama; F. W. Davis; H. N. MacLaurin, M.D.
Mars	Mediterranean	Surgeons	M. T. West; J. Harvey.
		Assistant Surgeons	J. Caldwell; A. B. Messer, M.D.
Medea	Irregular	Surgeon	J. Austen.
		Assistant Surgeon	J. Brown.
Medina	Mediterranean	Surgeon	R. Willcox.
Megæra	Irregular	Surgeon	F. H. Blaxall, M.D.
		Assistant Surgeon	W. L. Powell.
Melpomene	Mediterranean	Surgeons	L. J. Monteith; V. C. Clarke, M.D.
		Assistant Surgeons	J. Trimble; R. Ratliffe.
Mersey	West Indies	Surgeon	D. J. Duigan, M.D.
		Assistant Surgeons	H. Harkan; W. Anderson (b); J Rogers; J. Noble.
Miranda	Irregular	Surgeon	H. Slade.
	Australia	Assistant Surgeon	R. Harding.
Mohawk	Mediterranean	Surgeon	G. F. A. Drew.
Mutine	Pacific	Surgeon	W. H. Cameron.
		Assistant Surgeon	E. J. Butler.
Marines	East Indies	Surgeon	J Little, M.B.
		Assistant Surgeons	W. Anderson (a); A. Cooper; D. M. Shaw.

SHIPS.	STATION.	RANK.	NAMES OF MEDICAL OFFICERS.
Marines	West Indies	Surgeon	J. Elliott.
		Assistant Surgeons	J. S. Adams; J. R. Anderson.
Marines	Pacific	Assistant Surgeon	J. F. Mitchell.
Naiad	Pacific	Assistant Surgeon	L. Lucas.
Narcissus	Cape of Good Hope	Surgeons	W. B. Dalby, M.D.; J. Cotton, M.D.
		Assistant Surgeons	A. H. Woodifield, M.D.; J. S. Levis, M.D.
Nautilus	Home	Assistant Surgeon	R. L. B. Head.
Neptune	Mediterranean	Surgeons	R. Pottinger; G. Gordon.
		Assistant Surgeons	A. Crosbie, M.D.; P. Keelan.
Nereus	Pacific	Assistant Surgeon	J. W. Leahy.
Niger	Australia	Surgeon	W. Patrick.
		Assistant Surgeon	R. C. P. Lawrenson.
Nile	West Indies	Surgeon	J. W. Reid (b), M.D.
		Assistant Surgeons	W. H. Lloyd, M.D.; W. J. Lewis; J. Hanbury.
Nimble	Irregular West Indies	Assistant Surgeon	J. Bradley.
Nimrod	East Indies	Surgeon	M. P. S. Ward.
Oberon	Brazils	Surgeon	J. Rorie.
Odin	East Indies	Surgeon	W. Hoggan, M.D.
		Assistant Surgeon	J. M. Hunter.
Orestes	Irregular	Surgeon	C. E. Playfair.
		Assistant Surgeon	E. Olive.
Orion	Mediterranean	Surgeon	E. H. Cree, M.D.
		Assistant Surgeons	C. Atchison; H. F. Nathan.
Orlando	Irregular	Surgeon	W. G. Goldin, M.D.
		Assistant Surgeon	W. Roche (a).
Orpheus	Irregular	Surgeon	J. M. Tronson, M.D.
		Assistant Surgeon	M. Coates.
Osborne	Irregular	Surgeon	G. B. Hill.
Pantaloon	Irregular	Surgeon	H. Harkan.
		Assistant Surgeon	B. Ninnis, M.D.
Pearl	East Indies	Surgeon	F. F. Morgan.
		Assistant Surgeon	H. S. Smart, M.D.
Pelican	Mediterranean; Irregular	Surgeon	J. C. Messer, M.D.
		Assistant Surgeon	A. C. Johnston.
Pelorus	Australia	Surgeon	S. Bowden, M.D.
		Assistant Surgeon	R. Edwardes.
Pembroke	Home	Surgeon	T. W. Jewell.
		Assistant Surgeons	E. T. Ryan; H. Maxwell, M.D.

SHIPS.	STATION.	RANK.	NAMES OF MEDICAL OFFICERS.
Penguin - -	Irregular; Cape of Good Hope -	Assistant Surgeon	J. Bishop.
Persian - -	Cape of Good Hope -	Surgeon - -	S. Clift.
Phaeton - -	Irregular - -	Surgeon - -	J. T. Caddy, M.D.
		Assistant Surgeons	T. Roche; A. J. Bolton.
Philomel -	West Coast of Africa	Assistant Surgeon	J. Cruickshank.
Pioneer - -	East Indies - -	Surgeon - -	W. F. M'Clinton, M.B.
Plover - -	Irregular - -	Assistant Surgeon	G. Goodman.
Plumper -	Pacific - - -	Surgeon - -	J. T. Gabriel.
		Assistant Surgeon	W. H. Bell.
Porcupine -	Home - - -	Surgeon - -	G. V. M'Donagh, M.D.
		Assistant Surgeon	J. Christie, M.D.
Princess Charlotte - -	East Indies - -	Assistant Surgeon	J. V. N. Blake.
Procris - -	Irregular; Mediterranean - -	Assistant Surgeons	J. Parker; E. Dunn, M.D.
Prometheus -	West Coast of Africa	Surgeon - -	H. Eales.
Pylades - -	Pacific - - -	Surgeon - -	J. T. Caddy, M.D.
		Assistant Surgeon	J. Paterson, M.D.
Quail - -	Mediterranean - -	Assistant Surgeon	E. F. Miles.
Queen - -	Mediterranean -	Surgeon - -	D. Thomson (b) M.D.
		Assistant Surgeons	R. Gilmour; W. Pattullo, M.D.
Racer - -	West Indies - -	Surgeon - -	G. Duncan, M.D.
		Assistant Surgeons	T. B. Martin; J. Rogers; R. B. O'Toole.
Racoon - -	Mediterranean -	Surgeons - -	S. S. D. Wells; H. Loney.
		Assistant Surgeon	J. L. Sands, M.D.
Ranger - -	West Coast of Africa	Assistant Surgeon	C. Keenan.
Recruit - -	Mediterranean - -	Assistant Surgeons	D. Duncan, M.D.; M. Coates.
Renard - -	East Indies - -	Assistant Surgeon	A. Murphy.
Renown - -	Mediterranean -	Surgeon - -	W. McK. Saunders, M.D.
		Assistant Surgeons	T. A. O'Flaherty, M.D.; T. Milne, M.D.; T. H. Taylor.
Revenge - -	Home - - -	Surgeon - -	W. Duirs, M.D.
		Assistant Surgeons	J. F. Fitzgerald; A. Fisher, M.D.; R. R. Siccarma; J. N. W. Colahan.
Rhadamanthus	Home - - -	Surgeon - -	G. P. Cooke.
Rinaldo - -	West Indies; Irregular - - -	Surgeon - -	A. L. Archer, M.D.
		Assistant Surgeon	R. Nelson.
Ringdove -	East Indies - -	Assistant Surgeons	J. Martin, M.D.; W. H. O'Toole.
Roebuck -	East Indies - -	Surgeon - -	G. F. Banks.
Rolla - -	Home - - -	Assistant Surgeon	A. S. Pratt.

SHIPS.	STATION.	RANK.	NAMES OF MEDICAL OFFICERS.
Royal Adelaide	Home	Surgeons	J. Sloan, M.D.; M. Thomson.
		Assistant Surgeon	R. Borrows, M.D.
Royal Albert	Irregular	Surgeon	A. E. Mackay, M.D.
		Assistant Surgeons	H. N. M‘Laurin, M.D; J. F. Fitzgerald.
Russell	Home	Surgeons	J. Bankier, M.D.; W. Evans (c).
St. George	West Indies	Surgeon	J. Stirling, M.D.
		Assistant Surgeons	J. N. J. O’Malley; J. Ferguson, M.D.; B. H. M‘Curdy.
St. Jean d’Acre	Mediterranean	Surgeon	H. Edmonds, M.D.
		Assistant Surgeons	E. H. Evans; F. L. W. Wright; E. Olive.
St. Vincent	Home	Surgeon	J. H. Patterson, M.D.
		Assistant Surgeons	E. M‘Sorley; F. Greene.
Sampson	East Indies	Surgeon	R. Hastings, M.D.
		Assistant Surgeon	G. F. Elliott, M.B.
Sanspareil	Irregular; Home	Surgeons	J. Thomson (c), M.D.; J. M‘Swiney.
		Assistant Surgeons	J. Austen; M. Magill; J. Mulvany; J. Thomson.
Saracen	East Indies	Assistant Surgeon	M. Rodgers, M.D.
Satellite	Irregular	Surgeons	H. Piers; W. E. O’Brien; J. Little.
		Assistant Surgeons	J. P. Courtenay; M. A. Harte.
Saturn	Home	Surgeons	D. Thomas; G. Yeo, M.D.
Scourge	Mediterranean	Surgeon	J. Young, M.D.
		Assistant Surgeon	T. D. Allison, M.D.
Scout	East Indies	Surgeon	S. Wade.
		Assistant Surgeon	T. L. Bickford.
Scylla	Mediterranean	Surgeons	J. Ward (a); J. Coogan (acting); F. Y. Toms.
		Assistant Surgeon	H. Hadlow.
Sealark	Home	Assistant Surgeon	C. R. Godfrey.
Sharpshooter	West Coast of Africa	Assistant Surgeon	T. Roche.
Sheldrake	Irregular	Assistant Surgeon	T. Hamilton.
Sidon	Cape of Good Hope	Surgeon	C. Crandell.
		Assistant Surgeon	R. W. Brigstocke.
Simoom	East Indies	Surgeons	J. B. Ricards; E. T. Mortimer (acting).
		Assistant Surgeons	F. C. Magrath; W. H. O’Toole; J. Martin, M.D.
Slaney	East Indies	Assistant Surgeon	F. Egan.
Snake	East Indies	Assistant Surgeon	J. C. Eastcott.

SHIPS.	STATION.	RANK.	NAMES OF MEDICAL OFFICERS.
Southampton	Home	Surgeon	L. T. Cunningham, M.D.
		Assistant Surgeon	A. C. Johnston.
Sparrowhawk	East Indies	Surgeon	F. Y. Toms.
Sphinx	East Indies	Surgeon	G. L. King.
		Assistant Surgeon	J. Johnston, M.D.
Spider	Irregular	Assistant Surgeon	J. F. Fitzgerald.
Spiteful	Irregular; West Indies	Surgeons	J. Grey (e); W. J. Baird, M.D.
		Assistant Surgeons	C. L. Cunningham; C. F. Wise; W. Graham; W. J. Thomason.
Spitfire	Irregular	Assistant Surgeon	P. M. Roe.
Spy	Brazils	Assistant Surgeon	F. H. Richardson, M D.
Steady	West Indies	Assistant Surgeons	E. M‘Carthy; C. L. Cunningham; B. H. M‘Curdy.
Styx	West Indies	Surgeon	W. Richardson.
		Assistant Surgeon	H. Maxwell, M.D.
Supply	Irregular	Assistant Surgeon	J. K. Smallhorn.
Surprise	Mediterranean	Surgeon	J. E. Dyas.
Tartar	Pacific	Surgeon	G. Mason, M.D.
		Assistant Surgeon	W. E. Dillon.
Termagant	Pacific	Surgeon	J. C. Walsh.
		Assistant Surgeon	T. E. Gorges.
Terrible	Mediterranean	Surgeon	G. J. Willes, M.D.
		Assistant Surgeon	D. R. Alcock.
Terror	West Indies	Surgeon	W. T. Domville, M.D.
Topaze	Pacific	Surgeon	C. Forbes, M.D.
		Assistant Surgeons	A. Rattray, M.D.; A. Turnbull, M.D.
Torch	West Coast of Africa	Assistant Surgeon	C. J. Fennell.
Trafalgar	Home	Surgeons	R. Bernard, M.B.; W. Telfer.
		Assistant Surgeons	E. Waller, M.D.; T. Hamilton; D. O’Connor.
Trident	Irregular; Mediterranean	Surgeon	C. H. Chambers.
Triton	Irregular	Assistant Surgeon	A. M‘Kenna, M.D.
Urgent	East Indies	Surgeon	T. J. Breen.
		Assistant Surgeon	R. Ferguson, M.D.
Valorous	West Indies	Surgeon	J. Andrews (b), M.D.
		Assistant Surgeon	F. Greene.
Victor Emanuel	Mediterranean	Surgeon	E. Nolloth, M.D.
		Assistant Surgeons	J. Dunwoodie; A. Robertson; F. B. Harley, M.D.
Victoria and Albert	Home	Deputy Inspector General	J. M. Minter, M D.

SHIPS.	STATION.	RANK.	NAMES OF MEDICAL OFFICERS.
Victory	Home	Surgeons	J. J. Acheson; H. Edmonds, M.D.
		Assistant Surgeons	T. M'Carthy; F. L. Graham.
Virago	Irregular	Surgeon	J. T. Gabriel.
		Assistant Surgeon	H. Macdonald.
Vixen	Irregular	Assistant Surgeon	R. H. Carroll.
Vulcan	East Indies	Surgeon	J. Mitchell (b.), M.D.
		Assistant Surgeon	S. Little, M.D.
Wanderer	Mediterranean; Irregular	Surgeon	L. H. J. Hayne, M.D.
Warrior	Home	Surgeon	S. S. D. Wells.
		Assistant Surgeons	J. Austen; E. W. Coleman, M.D.; W. J. Asslin.
Wasp	Cape of Good Hope	Surgeons	W. M. Ogilvie; J. Sproule; R. W. Brigstocke (Actg.)
		Assistant Surgeon	E. T. Roffey.
Wellesley	Home	Surgeon	J. Davidson, M.D.
		Assistant Surgeons	W. Hobbs; P. Mansfield, M.D.
Wellington	Home	Surgeon	M. Thomson.
		Assistant Surgeon	J. Thomson.
Weser	Irregular; Mediterranean	Assistant Surgeon	J. F. Kynsey.
Wrangler	West Coast of Africa	Assistant Surgeon	C. F. Williams.
Wye	Irregular; West Coast of Africa	Assistant Surgeon	E. Mulcahy.